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The Influence of Top Managers' Cognitive Frames and Organizational Experience on Firms' Risk-taking Decisions and Performance

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안 신 혜

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The Influence of Top Managers' Cognitive Frames and Organizational Experience on Firms' Risk-taking Decisions and Performance

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The paper argues that top managers' cognitive frames, or their mindsets in interpreting environments and driving actions, can have significant interaction relationships with their firms' organizational extreme performance experience—success and failure—in affecting firms' subsequent risk-taking decisions as well as their failure rate. The primary logic under the idea was that firms' strategic decisions and performance are outcomes of the firms' multiple organizational and managerial factors, such as firms' behavioral characteristics manifested in their decision making processes, top decision makers' cognitive biases stemming from firms'

organization-level experience, and the focus of the top decision makers' attention headed toward either the status quo or change. The paper investigated the research idea by analyzing a sample of U.S. commercial banks which initiated their operation between 1976 and 2004 and by using analysis tools including content analysis, regression analysis, and event history analysis methods. Empirical results of the investigation partially supported the hypotheses that top managers' cognitive frames for change positively interact with organizational success and failure experience in increasing firms' risk-taking decisions and in decreasing firms' failure rate more strongly than cognitive frames for the status quo. In addition, the power the top managers' cognitive frames has in influencing firms' decisions and performance was identified to be stronger in firms' organizational failure experience than in success experience. Though some hypothesized propositions were failed to be supported, the general idea of the propositions that top managers' attention has the power to make difference in the influence which firms' organizational experience exerts on firms' strategic moves and performance was empirically reconfirmed. In conclusion, this research suggests some future research agenda for validating and advancing propositions of the "attention-based view of the firm" that the role of top managers and their attention is not limited to its

long-known function of receiving external stimuli, but encompasses the function of exercising significant influence on creating firms' environment, which is essential for firms' subsistence and further improvements in today's management environment.

Keywords: managerial attention; attention-based view of the firm; organizational performance experience; organizational learning; organizational decision-making

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I. INTRODUCTION

Research over the past several decades has shown that attention of organizational managers is one of the important elements to consider for understanding firm's decisions and performance. Drawing on the attention-based view of the firm set forth by Ocasio (1997), in which firm behavior is interpreted as a reflection of organizational and managerial attention, and additionally, the upper echelons theory of Hambrick and Mason (1984), which links demographic and cognitive characteristics of top managers with firm performance, research that focuses on top managers' attention as an antecedent of firm decisions and performance has been increasing in number (e.g., Cho & Hambrick, 2006; D'Aveni & Macmillan, 1990; Fiol, 1989; Hambrick, Cho, & Chen, 1996; Kiesler & Sproull, 1982).

Particularly, the recovery and failure of banks during the recently erupted financial crisis have reconfirmed the importance of top managers' attention in rise and fall of firm performance. Sudden outbreak of the subprime financial crisis of 2008 drove many firms to fail, and the case of performance downturns were of no exception for large-sized financial institutions in the U.S., which had been long-renowned for their successful performance in the finance industry. For instance, bankruptcies of mega

finance institutions, such as Goldman Sachs, Bear Stearns, Merrill Lynch, and Lehman Brothers were surprising events, since these banks have been long established and have shown successful results throughout their operation (Guillen, 2009; New York Times, 2008[1]). On the other hand, not all firms in finance industry languished in poor performance during the crisis. Certain institutions, for instance JP Morgan and Citigroup, showed distinctive performance among others and managed to survive and make turnarounds during the crisis by promptly adapting to the environment (CNN Money, 2008[2]; New York Times, 2010[3]). About this stark difference in performance shown by groups of finance industry firms during the period, numerous research and reports have focused their attention on the firms in the finance industry inquiring on what have driven certain banks to make notable high-performance, while others struggled with turbulent environment of the time. Among many factors that may have given difference in firm performance, top managers' attention to and their interpretation of firm environment have been pointed out by a number of

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[1] Sorkin. *Lehman Files for Bankruptcy; Merrill is Sold*. The New York Times. September 14th, 2008. http://www.nytimes.com/2008/09/15/business/15lehman.html?pagewanted=all

[2] Eric Dash. *Citigroup, in Turnaround, Reports $4.4 Billion Profit*. The New York Times. April 19th, 2010. http://www.nytimes.com/2010/04/20/business/20citi.html

[3] Shawn Tully. *How J.P. Morgan Steered Clear of the Credit Crunch*. CNN Money.com. September 2nd, 2008.

studies to have exercised influence on firm performance, in some cases the power of their influence strong enough to determine the survival and death of certain banks (e.g., CNN Money, 2008[2]; Burg, Scheinert, & Streitz, 2012; Sahlman, 2009). Banks that made performance turnarounds during the crisis had high likelihood of having top managers whose attention and action differed from those who failed, including their time of crisis recognition (Mack , 2011).

Given that recent crisis in finance industry grouped banks into categories of the ones that couldn't avoid bankruptcy and those that survived and recovered and that top managers' attention was one crucial factor that determined firm performance during the crisis, this research calls into question the type of relationship that existed among key firm-level variables: top managers' attention, corporate circumstances, firms' decisions and, and their performance. Specifically, considering the fact that every firm is idiosyncratic in its economic and organizational characteristics, this research focused its attention on one facet of firm characteristic—*their past performance experience*—as a representation of corporate circumstances or situation. Organizational experience has been discussed by the behavioral theorists (e.g., Cyert & March, 1963; March & Simon, 1958) as one of crucial factors affecting organizations' subsequent behavior. In a similar way,

Cyert and March (1963) pointed out in their theory of firm behavior that organizations' behavior is not only determined by their current set of circumstances, but also by the *past* organizational goals and performance of themselves and their competitors. Following these points made by behavioral theory scholars, this research regards organizational experience, or the past performance history of firms, as an organizational characteristic representing firms' circumstances which are capable of giving influence on and are affected by the attention of organizational decision makers.

By considering organization-level experience and top manager's attention simultaneously in research, this study expects its research work to fill yet unfilled research voids that exist in prior research streams. Till this day, many of the research studying organizational experience have been focusing on the effects organizational experience provide on firm performance, such as firm failure rate (Baum & Ingram, 1998; Kim, Kim, & Miner, 2009), acquisition performance (Haleblian, Kim, & Rajagopalan, 2006), and technical performance outcomes (Madsen & Desai, 2010). However, to my knowledge, research which takes into account of top managers' attention along with behavioral characteristics incurred by firms' organization-level experience, is hard to find. Thus, elucidating the micro-process black box that exists between organizational experience, top

managers' attention, and firm performance requires scholars' attention, for untangling relationships among them. Having found this research void, this research draws on the behavioral perspective theories and inquires on whether firms' prior extreme performance experience, classified into success and failure, interacts with top managers' cognitive frames or 'mind-sets' in a significant way in influencing firms' decisions and performance.

To sum up, the goal of this paper is in providing an answer to the following research question—in what way do firms' organizational experience and their top managers' attention interact with each other in determining direction of organizational decisions and level of firm performance? The theoretical pillars used to build up contentions for answering the question are as follows: the behavioral theory of the firm (e.g., Cyert & March, 1963; Greve, 2003); the attention-based view of the firm (e.g., Ocasio, 1997); theories on organizational learning (e.g., Levitt & March, 1988); and finally, the theories on the risk involved in decisions (e.g., March & Shapira, 1987).

Next section of the paper reviews theoretical backgrounds, introduces the study's basic research idea, and presents the study's hypotheses that would be analyzed in the following section.

II. THEORY AND HYPOTHESES

2.1. Top Managers' Attention and Organizational Experience in Firms' Organization-level Learning and Decision Making

Organizations have been perceived as having the ability to learn from and adapt themselves to their changing environments in numerous research works (e.g., Cohen & Levinthal, 1990; Cyert & March, 1963; Levitt & March, 1988). In the behavioral theory of the firm of Cyert and March (1963), organizations' capability for learning has been pointed out, particularly in their process of decision making; organizations adapt their goals to the environment, change their attention rules, and search rules during their decision making process. The theory assumes organizations' goals, attention, and search activities to continually be revised and change by the organizations' constant efforts for developing and modifying organizational communication codes and language which are affected by their prior direct and indirect experience (Cyert & March, 1963). Similar to the aforementioned theory's perspective, theories on organizations, administrations, and decision-making have shared their views on organizations that they are history dependent and are able to make

incremental adaptation to the environment, showing signs of their ability for learning (e.g., Levitt & March, 1988; Lindblom, 1959; Steinbruner, 1974). Cohen and Levinthal (1990), a group of organization theory scholars who termed the learning and knowledge-exploiting capability of organizations as "absorptive capacity", interpreted organizations as learning and knowledge-seeking entities that "recognize the value of new information, assimilate it, and apply it to commercial ends." To summarize the common grounds of these theories about organizations' characteristics, organizations can take in new information by taking in knowledge gained from their environment, ultimately *learning* for making change in themselves.

About how and in what process organizations learn and accumulate knowledge, theories above have been giving similar and interrelated answers to the question: the main driver of organizational learning and adaptation is members included in organizations (e.g., Cohen & Levinthal, 1990; Cyert & March, 1963; Levitt & March, 1988; March & Simon, 1958). For instance, Cyert and March (1963) mentioned the role of top executives or top decision makers of firms to be essential in firms' learning and decision making. According to their explanation, firm executives' characteristics, such as their psychological properties (i.e., values and personality) and managerial experience (i.e., tenure and functional

backgrounds) are crucial in understanding change in firms' goals, attention rules, and search rules (Cyert & March, 1963).

Later on, theory of Cyert and March (1963) emphasizing the role of firms' top decision makers in how firms learn and make decisions have been developed by the Carnegie school and the upper echelons theory scholars. Over three decades, the Carnegie school and upper echelons theorists have been constantly increasing their research on how organizational decision makers, or top managers of firms, perceive, interpret, and make actions in their environment, with their perspectives, values, and information gained exercising influence in the process (i.e., Daft & Weick, 1984; Hambrick & Mason, 1984; Kiesler & Sproull, 1982; Thomas, Clark, & Gioia, 1993). The impacts given by the CEOs and the TMT members on firms' strategic moves and performance have been found in numerous research to be substantial and significant, in contexts including joint ventures (Fiol, 1989), innovation (Bantel & Jackson, 1989), environmental crisis (D'Aveni & Macmillan, 1990), within-industry competitions (Hambrick, Cho, & Chen, 1996), and environmental shifts (Cho & Hambrick, 2006).

One research stream of above upper echelons theory have been focusing on the cognitive characteristics of top managers, drawing on Ocasio (1997)'s attention-based view of the firm (e.g., Cho & Hambrick,

2006). In the attention-based view of the firm, Ocasio (1997) interpreted firms as comprehensive aggregations of and continually interacting units of "attention", which in turn is defined as "the noticing, encoding, interpreting, and focusing of time and effort by organizational decision-makers on their issues and answers; the organizational cognitive repertoires for making sense of the environment and for strategizing action alternatives." The research stream's perspective on top managers' attention have been gaining increasing support over the years, in research studies exploring diverse facets of managerial attention, such as the level of top managers' hubris or self-confidence (Hayward & Hambrick, 1997), entrepreneurial orientation (Cho & Hambrick, 2006), and temporal and spatial locus of attention (Yadav, Prabhu, & Chandy, 2007).

By focusing on the role of top managers' attention in a novel organizational circumstance and environmental conditions, present research aims to support the main contentions proposed in the attention-based view of the firm and the upper echelons theory. To achieve this goal, the research focuses on the impact of top managers' attention in organizational process of decision making with organization-level experience as given organizational circumstance. In the following sub-sections of the paper, prior literatures related to the topic (i.e., organizational learning, top managers' attention,

organizational performance experience) will be introduced to discuss how the theories interrelate with each in explaining how firms learn, make decisions, and make performance outcomes.

2.1.1 The Process of Organizational Learning and Decision Making

The process of organizational learning and decision making was initially systematized as a theoretical model in the behavioral theory of the firm of Cyert and March (1963). Cyert and March (1963)'s model of organizational learning and decision making took a more comprehensive approach on firms, compared to the approach of prior theories (i.e., classical economics, organization theory), by joining the theories of prior studies together to make propositions on how firms behave while making decisions during the learning process. According to their explanation, firms' decision making is composed of three distinguished stages, that are "evaluation", "search", and "decisions" (Cyert & March, 1963). The scholars' behavioral theory understands firm behavior during the decision making process as a connected, sequential process, with each stage of the process including its own firm-level behavioral characteristics.

To briefly summarize the process, firms initially evaluate their

current performance based on their aspiration levels, then move on to conduct search activities following the evaluation outcomes gained from the previous stage, and finally make decisions by gathering up overall information gathered from previous stages, such as data from performance feedbacks, reached-out solutions for detected problems, and decision rules determined for the decision process. Cyert and March (1963)'s decision making process for firms, called as "Evaluation-Search-Decision process", can be summarized as the diagram shown in Figure 1.

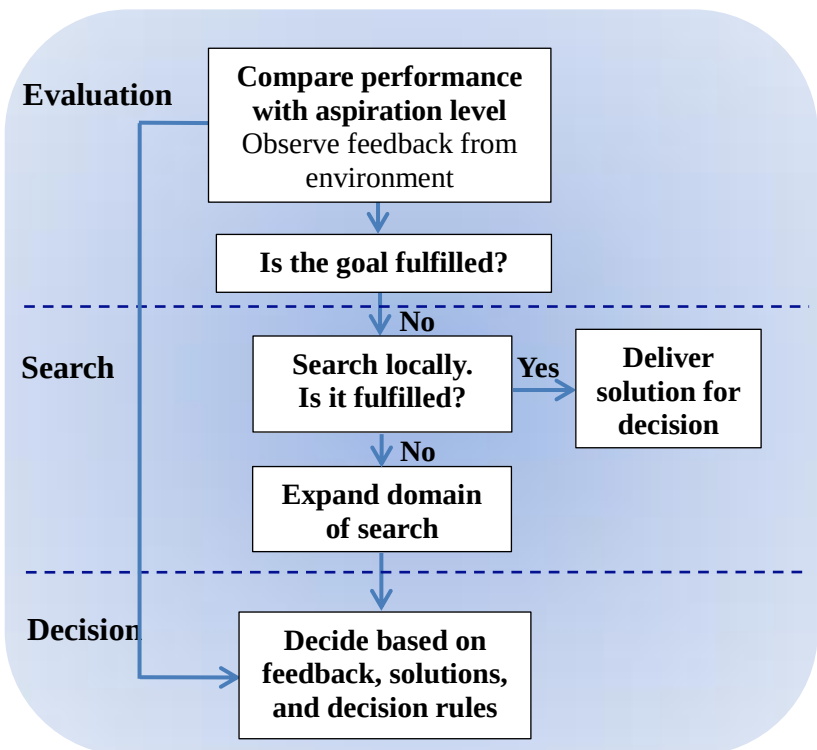

FIGURE 1 Cyert and March (1963)'s Model of Organizational Decision Making Process

Considering the influence of firms' *past* direct- and indirect-level prior experience, along with the influence that spring from the firms' *present* set of circumstances, is one of the notable factors of Cyert and March (1963)'s decision making process model. In the model, multiple organization-level factors, for instance, organizational goals, expectations, and activities of choice and control, jointly work together to reach the final stage of the process, the making of firm decisions. About these components included in firms' decision making process, Cyert and March (1963) emphasized their history-dependent characteristics; each component of the process is a functional outcome of organizational inputs that are from the past as well as present circumstances of theirs and their competitors. Thus, according to the behavioral theory, firm behavior shown in decision making process is as not only consequences of the firm's present situation, but also the reflection of the organizations' and influential others' past experience (Cyert & March, 1963). In short, it can be driven from the Cyert & March (1963)'s theory that firms make decisions following stages in a sequential process, whose components are shaped by the past and present of organizational circumstances belonging to organization themselves and to influential others.

Cyert and March (1963)'s theoretical propositions that firms make

decisions following a sequential process under the influence from the past and present was later refined and enriched by Greve (2003). Greve (2003), by including specific behavioral characteristics and activities that unfolds and come into effect in firms along the process (e.g., slack, search activities, behavior toward risks), developed and elaborated each stage of Cyert and March (1963)'s Evaluation-Search-Decision model. For enriching its stage, Greve (2003) introduced some new concepts in the model, including performance feedback (Lant, 1992; Lant & Montgomery, 1987; Mezias & Murphy, 1998), organizational search activity (March, 1981), and risk taking behavior (Tversky & Kahneman, 1974; Wehrung, 1989), in order to more clearly understand the behavioral differences shown among firms. Overall, Greve (2003)'s model extended that of Cyert and March by providing enriched explanations on each stage of organizational decision making process. Diagram in Figure 2 shows the Greve (2003)'s developed model.

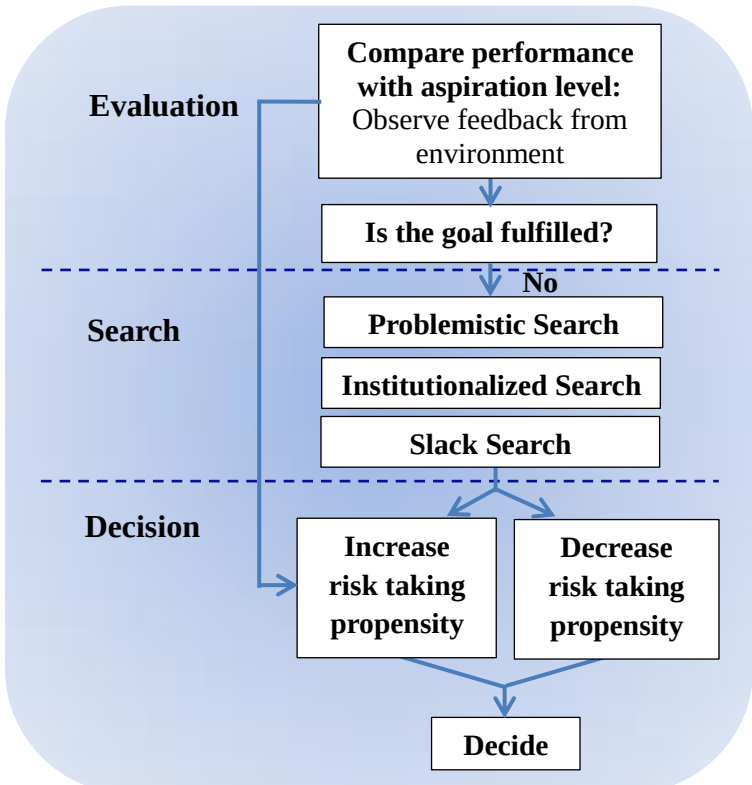

FIGURE 2 Greve (2003)'s Developed Model of Organizational Decision Making Process

Figure 2 shows that Greve (2003)'s refined model of organizational decision making process follows the basic framework used by Cyert and March (1963), 'evaluation', 'search', and 'decisions'. Though the major framework used is same in the two models, the model by Greve (2003) provides more enriched perspective on how firms behave during their decision process.

The whole process of firms' decision making starts with the initial 'evaluation' stage, in which firms determine their 'aspiration level' and appraise their present performance position with the determined standard. Firms' aspiration level refers to "the borderline between perceived success and failure and the starting point of doubt and conflict in decision making" (Schneider, 1992; Greve, 2003) and the firms' decision makers and the bounded rationality reflected in decision makers' characteristics play a substantial role in determining the aspiration level (Greve, 2003). Firms' decision makers, or top managers, set their firms' aspiration level by integrating knowledge from learning that are from the firms' present circumstances as well as their past experience (Greve, 2003; Lewin et al., 1944), as it was noted in theories of Cyert and March (1963). Throughout the process, the determined level of organizational aspiration exercise substantial influence on firms, from the type of search activity initiated in firms to the firms' subsequent survival rate (Greve, 2003).

Once firms determine the level of their aspirations, they evaluate their present performance with the determined aspiration, and move onto the second stage of decision making process—the search stage. In this stage, organizations initiate certain type of search activity following the estimation outcome made in the previous stage. The disparity or mismatch found

between firms' performance and aspiration level drives firms to search for ways to bring up firm performance and fill up the found discrepancy. "Organizational search", one of the central concepts that have been used in prior studies for explaining firm behavior, refers to firms' comprehensive organizational activities that focus on making improvements in firm performance (Greve, 2003). Search, an everyday phenomenon in organizations and a precursor for organizational change, is classified into three types of activities; slack, institutionalized, and problemistic search (Cyert & March, 1963). It is a substantial management activity of firms that are conducted in firms to make significant change in their organizations, including firms' activities as discussion meeting for strategy formulation, adoption of novel procedures in a production domain, and consumer research of an institution included in firms' marketing domain (Greve, 2003). All in all, these search activities function in improving firms' efficiency, productivity, creativity of innovation outcomes that fall behind their aspiration level.

One thing notable in the search stage of firms' decision making process is that different search activities are initiated for bringing change in firms, according to the performance feedback that comes from the previous stage. The type of search activity is determined by the type of reactions

firms make to the previous stage's performance feedback, in other words, by how they perceive their present performance position through the evaluation made with their aspiration level (March, 1981). In all performance position, whether or not the performance outcome reached above the level of firms' aspiration, firms continuously conduct 'slack' and 'institutionalized search' to make novel innovations in organizations. When firm performance reach above the level of their aspirations, the two search activities dominate in organizations, with the third, final type of search activity, the problemistic search, omitted from firms' search activity. In this situation, organizational members, with the extra time and resources provided in their firms, are motivated to experiment in their work field to find new discoveries for enhancing firm performance (Schoonhoven & Jelinek, 1990; Darr, Argote, & Epple, 1995). Driven by decision makers' interpretation of their firm performance as positive, voluntary participations of motivated managers and certain firm mechanisms and institutions, such as quality circles, R&D institutions, and market research centers, all contribute in implementing organizations' slack and institutionalized search activities (Greve, 2003).

On the other hand, when firms fail to make performance outcomes that meet the level of their aspirations, firms initiate the previously omitted problemistic search activity in their organizations. As the name of the search

activity implies, ‘problemistic search’ refers to a firm’s activity “that is stimulated by a problem” and “is directed toward finding a solution to the problem.” (Cyert & March, 1963). In other words, it is initiated in firms when the firms make low sales, have poor quality assets, or receive poor credit ratings from external institutions, and guide the firms with weak performance to search for the cause of and the solutions for the problem (Greve, 2003). The problemistic search may bring substantial change in firms and the specific contents of the search activity range from enacting ad hoc research teams and task forces to holding staff sessions for solutions (Greve, 2003). The problemistic search activity is distinctive in its characteristics from other search activities (i.e., slack and institutionalized) in that it is goal-oriented, rather than be led by the random curiosity of organizational members as in slack search (Cyert & March, 1963). The goal-oriented features of problemistic search activity drive firms to make actions to change their organizations, each of which vary in its intensity and focus due to idiosyncracies of each firm’s circumstances (Greve, 2003).

The final stage of organizational decision making process is the ‘decision’ stage in which activities for bringing substantial change in organizations are initiated (Greve, 2003). In this stage, firms’ decision makers compare the costs and benefits of their alternative decisions and

evaluate the risk accompanied in their strategic choices (Greve, 2003). For firms situated in decision making stage, risk entailed in each of the choice sets they have is a crucial factor to count into considerations (Greve, 2003). Since firm decisions are made by boundedly rational decision makers, characteristics of firms' decision makers, particularly the way they perceive and interpret risk, gains much importance at this point of the decision stage.

How the concept of risk is approached, either by the statistical approach of economics or by the approach explained by the behavioral theory, determines firm decision makers' definition and management of risk in each of their decisions. In the classical decision theory, risk is defined and measured as the nonlinearities existing in each decision's utility or as the variance in the probability distribution of a certain decision alternative's gains and losses (Arrow, 1965; Pratt, 1964). On the contrary, the risk measured by the behavioral theory is inconsistent and less precise than the value measured by statistics' approach, and its value varies according to the contexts in which the risk-involving decision lies, such as the degree of perceived danger, the probability of risk's incidence, and the volume or the magnitude of risk (March & Shapira, 1987).

According to March and Shapira (1987), the level of risk involved in each decision is determined by the attentional focus possessed by decision

makers. The behavioral theory on risk and risk-taking decisions posited the attentional focus of decision makers to shift or alter its direction following their given circumstances, particularly the level of their prior performance. When decision makers have made strong outcomes in their prior performance and their level of performance is positioned above the aspiration level, the decision makers become conservative toward taking risk in their decisions; but as their asset position continually increases, they alter their risk-taking tendency at certain point and become risk-favoring in their attitudes in increasing terms (Arrow, 1965). Conversely, when decision makers have made weak outcomes in their prior performance and their level of performance falls below the aspiration level, they show greater willingness for taking risks in order to meet their performance shortfalls; but the poorer the decision makers' asset position becomes, the greater their perceived danger for failure in taking risks, which leads to change in their risk-taking tendency toward increasing level of risk-taking (March & Shapira, 1987). Thus, the standpoint of the behavioral theory on risk-taking behavior can be summarized that risk-taking decisions are influenced by decision makers' circumstances, particularly their performance outcomes, and by their 'attentional focus' which attach meanings on performance outcomes, either as gains or as losses. Decision makers' attentional focus, or the 'decision targets' have been classified in prior studies into "success" and

"survival" (Lopes, 1987; March & Shapira, 1987). Shifts in decision makers' risk-taking tendency following their performance position have been suggested by the behavioral studies (e.g., March & Shapira, 1987) to be attributed to shifts in decision makers' attentional focus, which alters its goal between success or survival following the increase and decrease of decision makers' asset position (March & Shapira, 1987).

The above propositions of the behavioral risk theory on risk-taking decisions are extensions of the prior research works achieved by predecessor decision scholars, such as Tversky and Kahneman (1974) and Staw and Ross (1987). These two groups of decision theory scholars share in common in their behavioral approach in understanding individuals' risk-taking decisions, but differ from each other in interpreting decision makers' behavior toward the change in performance outcomes. First of all, the prospect theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1974) argues decision makers' risk-taking decisions to be outcomes of their reference points, the standards used for evaluating performance outcomes. When performance level falls below the reference point, decision makers adopt risk-seeking decisions; whereas in situations when performance reaches above the reference point, decision makers show different tendency toward risk by choosing risk-averting decisions (Kahneman & Tversky,

1979). The contentions of the prospect theory on individuals' natural tendency in risk-taking decisions have been supported in numerous studies, including experimental studies of various contexts (e.g., Laughunn, Payne, & Crum, 1980). However, there has been another stream of research in the decision theory interpreting individuals' decision behavior in a different point of view, driven by Staw and Ross (1987) and Staw, Sandelands, and Dutton (1981). This group of scholars (Staw & Ross, 1987; Staw, Sandelands, & Dutton, 1981) suggested different risk-taking behavior of decision makers in the losses domain; as asset position decreases, decision makers reverse their tendency from risk-taking to risk-averseness, becoming rigid in bringing change in their organizations, as the decrease becomes to be perceived as a threat, rather than an opportunity for improving the falling performance. The logic behind the suggestions was that decision makers, as their performance continuously weakens, shift their attentional focus from the hoped-for aspirations to the fear for failure (Lopes, 1987). Numerous experimental studies, such as that of Lant and Hurley (1999), have supported the above contentions.

All in all, the behavioral risk theory, particularly those emphasizing the cognitive and the attentional characteristics of decision makers (e.g., March & Shapria, 1987), encompasses both the contentions of the prospect

theory as well as that of the threat rigidity-related theory, and suggests that decisions and their level of risk-taking are outcomes of both the organization-level determinants (i.e., performance outcomes, aspiration level) and the managerial characteristics, including the top managers' attentional focus and decision targets. By including risk-involving decisions as one subject of research and by studying the joint relationship of organization-level circumstance (i.e., organizational experience) and individual-level characteristics, in particular the attention of firms' top managers, this research paper attempts to expand understandings on how risky decisions are made in the relationship.

2.2 Top Managers' Cognitive Frames and Organizational Performance Experience as Determinants of Firm Decisions and Performance

Till this day, the volume of research which focuses on organizational extreme performance experience, classified into 'success' and 'failure', and effects it gives on organizations' subsequent performance achievements has been steadily growing. Throughout the research stream, a multidisciplinary approach has been taken to explain the relationship between firm experience and performance, by drawing on diverse theories the psychology, sociology,

and the organization theory. And as the result, diverse theoretical concepts have been applied to build up theories, such as ‘behavioral learning theory’ (Thorndike, 1898; Hearst & Koresko, 1968), ‘competency traps’ (Levitt & March, 1988), ‘superstitious learning’ (Levitt & March, 1988), and ‘absorptive capacity’ (Cohen & Levinthal, 1990) and diverse contexts have been used including corporate acquisition and innovation. With these efforts, the research stream have been supporting their major contention that organizations’ extreme-level of performance experience, generally classified into success and failure, cause cognitive bias in decisions, due to the experience’s saliency and the decision makers’ bounded rationality with regards to the organizations’ extreme performance experience. The research works share the common ground in their perspective that organizations’ extreme experience is a double-edged sword for firms’ performance, in that they function as strengths as well as weaknesses for firms aiming for performance improvements (e.g., Levitt & March, 1988; Kim, Kim, & Miner, 2009).

As an extension to the previously mentioned research stream, this research tries to make some contributions in the research stream by focusing on the behavioral characteristics of firms, drawing on Cyert and March (1963) and Greve (2003)’s model of decision making process. Specifically,

as in Cyert and March (1963)'s model, the research divides firms' decision making process into 'evaluation', 'search', and 'decision' and inquire on how firms behave in each of the stage with firms' organization-level experience and managerial-level attention.

Organizational extreme experience has been classified into 'success experience' and 'failure experience' in this research. *Success experience* refers to firms' cumulative history of organizational performance during which organizations made exceptionally strong, high level of performance, as defined by Kim, Kim, and Miner (2009). As for *failure experience*, it is a term that stands in the opposite end of the performance range, and is a type of experience when firms severely underperform, influencing firms adversely in their financial, social, and psychological sectors (Ucbasaran et al., 2013).

Next section of the paper discusses theories on organizational learning and managerial attention to explore interaction relationships among them, with the previously introduced theories of organizational decision making process (Cyert & March, 1963; Greve, 2003) and the behavioral decision theory (e.g., March & Shapria, 1987).

2.2.1 The Influence of Organizational Extreme Performance Experience on Firm Behavior

Organizations' success and failure experience have been theorized and found by previous research to give both positive and negative influence on firms, their role often compared by the previous studies to the characteristics of double-edged swords (e.g., Kim, Kim, & Miner, 2009; Levitt & March, 1988). In this part of the section, the paper discusses the ambivalence found in the nature of organizational extreme performance experience and takes a closer look on how the experience affects decision makers' cognition, firm decisions, and performance.

As for firms with strong performance history, the influence springing from prior success experience remains effective onto firms' later performance and brings positive effects on firm behavior as the result. One such positive effect from success experience is decision-makers' solidified confidence on firms' previous strategies and management routines (Audia, Locke, & Smith, 2000; Greve, 1998; Kim, Kim, & Miner, 2009; Kraatz, 1998). To interpret firm behavior following Cyert and March (1963)'s model, firms' prior strong performance history become 'evaluated' as being above the aspiration level, which induces slack and institutionalized 'search activity' in firms to bring novel improvements in firm, resulting in 'making

decisions' that involve lowered level of risk, bringing less change in firms (Cyert & March, 1963; Greve, 2003). As a consequence, success experience results in providing firms some positive effects by increasing efficiency in resource utilization and reducing efforts for unnecessary problemistic search activity.

However, though success experience provides certain positive effects on firms it may also produce some negative effects in firms in their decision making process. One such negative influence of success experience is the cognitive biases incurred by the experience which increases errors and faults in subsequent decisions (Sitkin & Pablo, 1992). Such cognitive biases may give rise to decision makers' misinterpretation of the cause and value of the prior successful performance due to the experience's high saliency and eye-catchy signal given to decision makers (Denrell, 2005). Due to this, organizations often misattribute the cause of prior success to firms' prior management routines, even when definite causal factors may not be clearly found (Miller & Ross, 1975; Van de Ven & Polley, 1992). Furthermore, decision makers in success experienced-firms bear high potential for perceiving environment in an imprecise way and imposing importance or unreasonably high value onto their prior strong performance (Audia, Locke, & Smith, 2000; Kunda, 1999). These characteristics have been pointed out

by prior studies to increase the risk of downplaying signs of weaknesses or deficiencies that may exist in organizations (Audia, Locke, & Smith, 2000), often leading to failure of firms in making sensible and prompt adaptation of themselves to the environment (Fiske & Taylor, 1991). These cognitive biases stemming from success experience can be understood in the behavioral theory perspective that being exempt from the pressure of implementing problemistic search activity induces firms to lose their chance of estimating their present performance position and exercising efforts for making improvements in themselves (Cyert & March, 1963). This may give imbalance in firms' search activity by driving firms to focus on success-driven search activities at the expense of conducting problem-oriented search activities, inducing one-sidedness in learning outcomes throughout the decision making process.

As for severely underperforming firms, firms and their decision makers face benefits as well as drawbacks from their failure experience, as in the case of success-experienced firms (e.g., Levitt & March, 1988; Ocasio, 1997). One major benefit that spring from organizational failure experience is having the chance to spur oneself to conduct problemistic search activity to detect the origins of their problem, find the solutions for the problems, and implement the solutions them for bringing developments in their

organization. Once organizations perceive their performance as falling below their aspiration level, they reconsider the effectiveness of their ongoing management routines and come to initiate problemistic search activities to enhance their failing performance (Cyert & March, 1963; Greve, 2003). By implementing the problem-oriented search activities, organizations take the chance of detecting their prior ill-functioned management practices and altering them into novel ones. The constant renewal and supplement of organizational practices streamline and better equip the firms for making improvements in performance (Wiseman & Bromiley, 1996).

Another benefit that organizations gain from their failure experience is that they may enlarge their knowledge base for future performance improvement by going through turnarounds and recovery. The enlarged and enriched knowledge base gained from organizational failure or recovery experience would equip organizations to respond to future similar situations in a more effective and prompt way (Kim, Kim, & Miner, 2009). Researchers in the behavioral learning theory (e.g., Haleblian & Finkelstein, 1999; Hearst & Koresko, 1968; Kamin, 1969) have pointed out characteristics of experience that it provides a better knowledge base for making decisions in the future, by providing information for generalizing

and discriminating confronted situation to their prior experience. In a similar vein, prior failure experience, especially the ones involving the case of turnarounds and recovery, would enrich firms' knowledge pool for decision making, enabling them to make better adaptations to the environment

Organizational failure experience, as organizational success experience, bears potential for incurring certain cognitive biases in firms' decision making, incurring on firms some negative effects. Decision makers' tendency of becoming either overly risk-taking or risk-averting in face of environmental change is one negative outcome of organizational failure-experience and the cognitive bias incurred by the failure experience. Since performance failure is highly salient to the public and stakeholders related to firms, the performance failure gives pressure on firms to make highly visible turnarounds or recoveries in performance outcomes (Miner & Anderson, 1999). Because of this pressure for improving firm performance, firms may miss to perceive the face value of their contingent problems and may make decisions that are either overly reactive or rigid in taking risks in their decisions (Kim, Kim, & Miner, 2009).

All in all, organizational extreme performance experience of success and failure are ambivalent in the influence they give on firms and their decision makers; their influence spurring organizations to make

performance improvements in one case, while deterring decision makers to make developments in another case. Regarding these ambivalent characteristics of organizational experience, this research inquires on the validity of prior research's implicit assumption that the influence the organization-level experience gives on firms are deterministic and unchangeable to firms. To be specific, this research contends that the impacts success and failure experience give on firms, both that are positive and negative for firm performance, may be determined and shaped by how the organizations' decision makers perceive and interpret their environment in the decision making process, in other words, *the attention of top managers.* As Ocasio (1997) has noted, firm decision makers have the ability to forge meaning in interpreting themselves, others, and their surrounding environments, by focusing and structurally distributing their attention in a given context. With this notion of the attention-based view of the firm about the role of managerial attention in firms' decision making and performance, the following section of the paper discusses how the attention of firms' top managers interacts with organizational extreme performance experience and gives impact on firms' risk-taking decisions for improving performance.

2.2.2 The Influence of Top Managers' Cognitive Frames on Firms' Learning and Decision Making

Since the lessons gained from experience are often drawn from a small number of observations and the causalities of experience-driven events are difficult for firms to untangle, what matters to success and failure-experienced organizations in decision making is not their extreme performance experience per se, but how they perceive and interpret their experience and their environments (Levitt & March, 1988; Thompson, 1967). The role of organizational decision makers in interpreting their organizations' prior experience and present circumstances has been discussed by previous literature as being similar to 'historians', as firms make interpretations of their environments under decision makers' cognitive biases and bounded rationality, their interpretations being far from that of 'perfect statisticians' (Levitt & March, 1988; Starbuck & Milliken, 1988; Thompson, 1967). As Daft and Weick (1984) have noted, organizations possess cognitive frames through which they comprehend their events and interpret their history. Thus, for organizations, constructing the organization-level 'thought world' apt for firms' confronted situations is required, especially for firms that strive to adapt themselves to the changing environment (Argyris & Schon, 1978). The organizations which attempt to change and renew themselves often reconstruct their mind-sets, in such

ways as consciousness raising, culture building, performance-feedback learning, and paradigm shifts (Brown, 1978; Beyer, 1981). To sum up, what organizations learn and accept from their prior experience is an outcome of the filtering effect of their top decision makers' cognitive frames or the "attentional structures" (March, Olsen, & Christensen, 1976; Ocasio, 1997) which form firms' paradigms and beliefs (Fischoff, 1975; Pettigrew, 1987) for interpreting firms' circumstances.

According to the attention-based theory of the firm (Ocasio, 1997), firms are "systems of structurally distributed attention" in which the cognition and action of their individual members are influenced by specific organizational context and situations that they find themselves in. As systems of distributed attention, organizations retain their "attentional structures" (March, Olsen, & Christensen, 1976), or the "social, economic, and cultural structures that govern the allocation of time, effort, and attentional focus" of decision makers (Ocasio, 1997). The attentional structure of organizations has been proposed by Ocasio (1997) to be composed of four categories which organically interact with each other in allocating organization's attention patterns, which are the "rules" for making decisions, "players or decision-makers" of organizations, "structural positions" in which the components of attentional structure are related, and

finally, the “organizational resources” (Ocasio, 1997). These components of organizations’ attentional structure jointlt work together in regulating organizational value of issues and answers, creating and distributing firms’ procedural and communication channels, and shaping organizational interests and identities, which in turn generate a set of decision premises and motivations for actions (Ocasio, 1997).

Among a myriad of factors that affect decision makers’ attention structure and the direction of organizations’ decision, this research focuses on a single yet a crucial factor that constitutes firms’ attention and decision: the risk involved in firm decisions for bringing change in organizations’ routines, practices, and strategies. According to the decision theory (e.g., Arrow, 1965; March & Shapria, 1987; Partt, 1964), determining the level of risk involved in each decision is a central factor to consider in making decisions. In conceptualizing risk and risk-taking behavior of decision makers, growing number of research in the behavioral decision theory (e.g., March & Shapira, 1987) have been focusing on the behavioral characteristics of decision makers, discussing their bounded rationality and the subjective conceptualization of risk as the central factor determining risk. Their approach differs from that of the classical decision theory which perceives risk as a statistical concept such as variation or nonlinearities in

the probability distribution of each decision's gains, losses, or revealed utility (Arrow, 1965; Pratt, 1964). The different conceptualization of risk made by the two lines of research stems from the difference in the preciseness in defining risk (Shapira, 1986), the priority given between the risk's probability and size (Shapira, 1986), and the standards used for the risks' estimation (MacCrimmon & Wehrung, 1986; Shapira, 1986).

The behavioral risk theory has made contentions that the level of risk taken in each decision is an outcome of multiple individual and organization-level factors. Incentives for individual members, experience of individuals and organizations, and motivation and attentional focus of decision makers have been pointed out as such factors (Atkinson, 1964; Deci, 1976; March & Shapira, 1987; McClelland, 1961). Among these myriad of factors, March and Shapria (1987) focused in their research the role of decision makers' attentional focus, or the cognitive importance given among a set of goals, which exerts a substantial influence on the process of determining risk that are involved in each decision. The main idea of their research has been that decision makers' attitudes toward risk are influenced by their attention which may shift its focus following their performance outcomes. In performance outcomes of the gains domain, decision makers become conservative toward taking risks since their positive level of

performance minimizes danger of falling below the aspiration level (March & Shapira, 1987; Shapira, 1986). However, decision makers' attitudes toward risk incrementally change from prior conservativeness to later aggressiveness as their asset position continues to increase above the aspiration level (March & Shapira, 1987; Shapira, 1986). This change in attitudes toward risk can be interpreted as the result of decision makers' attention focus shifted from 'success' to 'survival'. However, as the continual increase in performance outcomes keep indicating positive signal to decision makers, the decision makers may inverse their attitudes toward risk and increase the level of their risk-taking decisions (Lopes, 1987; March & Shapira, 1987, 1992). Conversely, performance outcomes in the losses domain drive decision makers in its initial stage to take increased level of risk-taking attitudes, since their performance record below the expectations press them to make actions for enhancing weakened performance (March & Shapira, 1987; Shapira, 1986). However, the decision makers' risk-favoring propensity reverses its direction and turn on its downturn as performance outcomes continue their negative record. As their asset position becomes poorer, decision makers perceive greater danger for failure and thus lower the level of their risk-taking decisions (March & Shapira, 1987; Shapira, 1986). As in the prior case of positive asset position, this shifting characteristics of decision makers' risk-taking tendency can be

understood as an outcome of their change in attentional focus; decision makers shift their attentional focus from ‘success’ to ‘survival’ to avoid danger of failure, as their asset position keep decreasing (Lopes, 1987; March & Shapira, 1987, 1992).

Drawing on the aforementioned behavioral theory on individuals’ risk-taking decisions, this research contends attentional focus or the attentional structure of firms’ top managers to play an essential role in determining the level of risk-taking decisions taken by their firms. The research, in particular, focuses on firms that have experienced exceptionally strong or weak performance outcomes in their prior history, and cast questions on the role of top managers’ attention in the relationship between the firms’ organization-level extreme performance experience and the level of their subsequent risk-taking decisions and firm failure rate. Following concepts in March and Shapira (1987, 1992)’s study, the research assumes “cognitive mindsets” or “attentional structures” taken by firms’ decision makers to exert substantial influential power on firms by setting decision premises and action motivations for them.

In this research, the attentional structure or the cognitive frames taken by firm decision-makers are classified into two: *‘cognitive frames for maintaining the status quo’* of firms’ strategies and management routines,

and the other, *'cognitive frames for change'* for making improvements in firms. The research categorized each of the status quo- and change-focused top managers' cognitive frames into three sub-categories in dimensions of decision makers' time perception, action orientation, and self-involvement into organizations. One is the time orientation of firms' top decision makers classified into *short-term and long-term*; another, the decision makers' action inclination classified into *passiveness-orientation and activeness-orientation*; and the other, the decision makers' self-attachment or involvement toward the business of their firms, classified into *partial and deep self-attachment to company.*

First of all, the "time orientation" (Bartel & Milliken, 2004) or the "temporal focus" (Bluedorn, 2002) of decision makers refers to their importance given in decision making among past, present, and future time frames (Zimbardo & Boyd, 1999). The relations between managers' time orientation and the risk-taking propensity of firm decisions have been studied by Cyert and March (1963) in their behavioral theory of the firm: firm decisions show low level of risk when firms' emphasis is put on short-run performance rather than future performance. In a similar vein, Ashkanasy et al. (2004) found in their study toward multiple countries that individuals with a present-time perspective, or short-term time focus, pursue

more immediate pleasure and take more risks, while those with more future-oriented and long-term time focus were found to be highly goal oriented, making longer-term plans, and considering more of future consequences. Following the results found in these research works, this research assumes the long-term, or the future-oriented temporal focus of decision makers to induce more risk-taking decisions, compared to their short-term, or past and present-focused temporal focus.

Secondly, decision makers' action propensity is classified in this research into passiveness and activeness, which are classified according to whether the firms' top managers perceive their environments to be unchangeable or to be subjects under their control, bearing potential for creation. Adler (1980) found in his study that firm managers who were more willing to take risk retained high tendency to actively manage and control their own situation, showing more activeness in actions. Similarly, Shapira (1986) found in his study that firm managers who believed risks to be manageable and controllable took significantly high level of risk by using their utilities and knowledge to reduce uncertainty in decisions. Following these study results, this study contends managers who show more activeness in their action propensity to show in their decisions higher willingness for taking risks than those who show passiveness in actions.

For the last, decision makers' self-attachment to company refers to their willingness to invest their possessed energy and resources (e.g., time, knowledge) on firms' business affairs. Linkage between top managers' self-attachment to their company and the level of their firms' risk-taking decisions have been researched by a number of prior studies (e.g., MacCrimmon & Wehrung, 1986; Shapira, 1986). For instance, MacCrimmon and Wehrung (1986) and Shapira (1986) found in their survey study that firm managers, who showed more attention focused on firm business than the affairs of their personal lives, to have taken higher level of risk in their decisions. Following the result of the prior studies, this research contends that the more the top managers attach themselves to the business of their firms and perceive themselves as members included in firms, the higher the higher the level of risk involved in their firms' decisions.

2.3 Interaction Relations of Top Managers' Cognitive Frames and Organizational Experience and their Influence on Firm Decisions and Performance

Till this point, previous sections of this paper have discussed theories on organizational learning (e.g., Cyert & March, 1963; Greve, 2003; Levitt & March, 1988), risk-taking decision making (e.g., March & Shapira, 1987),

and attention-based view of the firm (Ocasio, 1997) to present arguments on the relationship between managerial attention, organizational experience, and firms' risk-taking decisions and performance. In particular, this study follows propositions and contentions of the attention-based view of the firm and theories on organizational sense-making and assumes that top managers of firms are "active creators of the environmental stimuli" (Ocasio, 1997: 200) who take their functions in firms of "constructing, rearranging, singling out, and demolishing many of the objective features of their surroundings" (Weick, 1979: 164). Furthermore, attention of firms' top managers is assumed in the research to "depend on the particular context or situation" in which the firms are situated in (Ocasio, 1997). With these assumptions, this research expects top managers' cognitive mind-set, or their cognitive frames, to interact with firms' organizational performance experience in providing significant influence on firms' decisions and performance. The expected relationships between top managers' cognitive frames and organizational experience are arranged in a table presented in Figure 3, each case of the interactions allocated in table's four quadrants.

		Top Managers' Cognitive Frames	
		Status Quo-focused Past & Present Time Orientation Passive Action Propensity Partial Self-attach. to Company	**Change-focused** Future Time Orientation Active Action Propensity Deep Self-attach. to Company
Organizational Experience	**Success Experience**	***1. Behaviors*:** Success-driven Bias ***Consequences*:** Low Risk-taking High Failure Rate	***2. Behaviors*:** Success-driven Bias Problemistic Search ***Consequences*:** High Risk-taking Low Failure Rate
	Failure Experience	***3. Behaviors*:** Failure-driven Bias ***Consequences*:** Low Risk-taking High Failure Rate	***4. Behaviors*:** Failure-driven Bias Problemistic Search ***Consequences*:** High Risk-taking Low Failure Rate

FIGURE 3 Interaction Relations between Top Managers' Cognitive Frames and Organizational Experience

To begin with, the cases when top managers possess cognitive frames for maintaining the status quo in firms with extreme performance experience (success and failure) belong to the interaction relationships of quadrant 1 and 3 of Figure 3. The situation in quadrant 1 corresponds to the case when decision makers lower the level of risk in their firm decisions as the decision makers become conservative toward taking risks as the result of their prior successful performance. As suggested by the prospect theory

(Kahneman & Tversky, 1979) and the behavioral risk theory (March & Shapira, 1987), this research expects top managers' risk-taking decisions to increase as their strong performance position minimizes the level of perceived danger for falling below the aspiration level. In this case, top managers have no incentive for implementing problemistic search, and instead, they would solidify their confidence in their management routines and devote their energy and resources in discovering novel knowledge (Cyert & March, 1963; Greve, 2003). In a similar vein, quadrant 3 refers to the case when the status quo-focused cognitive frames taken by top managers give impacts on firms by lowering the level of risk-taking decisions, in firms with failure experience. This tendency of decreased risk-taking behavior with weak asset position corresponds to risk theories suggested by Staw and Ross (1987) and Staw, Sanderlands, and Dutton (1981), who attributed the decreased risk-taking to decision-makers' shift in their attentional focus from success to survival. In this situation, attention structure of top managers tuned for maintaining stability wouldn't initiate any problemistic search activity and would blind the decision-makers from detecting organizational problems, further intensifying problems inherent in organizations. All in all, the level of risk-taking decisions would decrease for firms situated in such case.

Next part of the section explores impacts coming from another, different type of top managers' cognitive frames, the frames for leading change in organizations, as in the case of quadrant 2 and 4 of Figure 3. As is shown in the quadrants, change-focused cognitive frames of top managers induce different decision outcomes compared to the ones induced by the status quo-focused cognitive frames. In the case of quadrant 2, firms' asset position above the aspiration level leads decision makers to perceive less danger for falling below their goals and consequently induce them to take higher level of risk-taking decisions (Arrow, 1965; March & Shapira, 1987). In this case, top managers' attention focused on change initiates problemistic search activity and heightens the level of firms' risk-taking decisions (Cyert & March, 1963) for making further improvements in firms. To summarize suggestions made for the case of quadrant 2, firms' risk-taking decisions heightens as top managers in firms with extremely strong performance experience possess cognitive frames focused on change. In a similar vein, quadrant 4 corresponds to the case when top managers' cognitive frames focused on change and firms' performance outcomes below the aspiration level lower the level of firms' risk-taking decisions. In this case, organizational problemistic search is amplified by the top managers' attention, as well as the organizations' prior experience. Performance below the aspirations would lead to higher risk-taking

tendency of decision makers and this risk-favoring tendency of decision makers would be strengthened by their attention focused on change.

As discussed above, cognitive frames for the status quo and change result in different level of firm decisions and performance in their interaction relations with firms' organizational experience. This research expects top managers' cognitive frames for the status quo, specifically the past and present time orientation, passiveness in action propensity, and partial self-attachment to company, to interact with firms' successful and failing performance experience and result in lowering the level of firms' risk-taking decisions. On the contrary, the research expects top managers' cognitive frames for change, the future time orientation, activeness in action propensity, and deep self-attachment to company, to jointly interact with firms' extreme performance experience and result in increasing the level of firms' risk-taking decisions. Summing up the above discussions, the research proposes the following hypotheses:

> ***Hypothesis 1:*** *Top managers' cognitive frames for change, (a) future time orientation, (b) activeness in action propensity, and (c) deep self-attachment to company, positively interact with organizational success experience in increasing firms' risk-taking decisions, more strongly than top managers' cognitive frames for the status quo.*

Hypothesis 2: *Top managers' cognitive frames for change, (a) future time orientation, (b) activeness in action propensity, and (c) deep self-attachment to company, positively interact with organizational failure experience in increasing firms' risk-taking decisions, more strongly than top managers' cognitive frames for the status quo.*

To add explanations on the research expectations above, the hypotheses involve the situations in which attention structure of top managers lead exceptional outcomes in firms' risk-taking decisions, which deviates from the generally supported expectations of the prospect theory (Tversky & Kahneman, 1974) and the threat rigidity theory (Staw & Ross, 1987). The present research assumes the unconventional increased level of firms' risk-taking decisions with success experience (quadrant 2) and the decreased level of firms' risk-taking decisions with failure experience (quadrant 3) to be results of the influence from top managers' attentional structure or their cognitive frames in the given corporate circumstances. The research's attribution to managerial attention for the firms' unconventional risk-taking behavior is based on the idea of prior studies (e.g., Ocasio, 1997) that how firms' top managers perceive, interpret, and add values on their environmental stimuli has a sufficient capability to belittle or enlarge the influence of organizational circumstances.

Next section of the paper explores the joint relationship between top

managers' attention structure and firms' organizational experience in giving impacts on firms' performance outcomes, specifically the firm failure rate. In case of quadrant 3 in Figure 3, firm failure rate is expected increase as top managers focus their attention on maintaining the status quo despite their organizational failure experience indicating performance level below firms' aspirations. In this case, firms are expected to increase their failure rate as top decision makers possess in their attention no willingness for changing their organizations, though their weak prior performance has sent signals of inherent problems of the organizations. This research expects the decision makers' cognitive bias driven by failure experience (i.e., imprecise inference of the causal relationships, superstitious learning, and strong social pressure for making recoveries), along with top managers' status quo-focused attention mitigating efforts for initiating problemistic search activity, to result in increased level of firm failure rate. Another case of interaction relations when top managers' status quo-focused attention comes into effect is the case of quadrant 1 in Figure 3. Again, the research expects firms' failure rate to increase as top managers possess cognitive frames for the status quo in firms with success experience. The reason for this expectation is that the cognitive bias stemming from firms' success experience and the complacency shown in top managers' attention in seeking change and improvements in their organizations would block the initiation of problemistic search activity,

resulting in decline in firm performance.

On the other hand, this research expects the performance results to be opposite when organizations' success and failure experience interacts with change-focused cognitive frames of top managers. Specifically, in the case of quadrant 2 when firms' top managers possess change-focused cognitive frames despite their firms' prior strong performance, firms would conduct problemistic search activity in their organizations which would mitigate some of the negative effects of success experience (i.e., cognitive bias) and drive change in the firms. Thus, the research expects top managers' cognitive frames for change to jointly interact with organizational success experience and to result in decreased level of firm failure rate. In a similar vein, failure rate of firms is expected to decrease when top managers' attention structure is tuned for organizational change in firms with organizational failure experience, as in the case of quadrant 4 in Figure 3. Organizational failure experience would initiate problemistic search activity in firms, as suggested by prior studies (Cyert & March, 1963; Greve, 2003), and the problemistic search activity would be further enhanced by the change-focused attention of firms' top managers, decreasing firm failure rate as the result. Based on this idea, the research proposes the following hypotheses on the relationship between top managers' cognitive frames,

organizational experience, and firm performance:

> ***Hypothesis 3:*** *Top managers' cognitive frames for change, (a) future time orientation, (b) activeness in action propensity, and (c) deep self-attachment to company, positively interact with organizational success experience in decreasing firms' failure rate, more strongly than top managers' cognitive frames for the status quo.*

> ***Hypothesis 4:*** *Top managers' cognitive frames for change, (a) future time orientation, (b) activeness in action propensity, and (c) deep self-attachment to company, positively interact with organizational failure experience in decreasing firms' failure rate, more strongly than top managers' cognitive frames for the status quo.*

Lastly, this research focuses on how the size of the influence the cognitive frames of top managers bring on firms' decisions and performance, differs by the type of firms' organizational extreme performance experience. Under the assumption that the level of impact that cognitive frames of firms' top decision makers give on firm decisions and performance is controlled as being consistent, the research expects failure experience of organizations to provide a better organizational circumstance for the effect of cognitive frames to exert their full potential influence on firms, compared to organizations' success experience. Failure experience is more salient to

organizations and to the public (Miner & Anderson, 1999) and provides special learning value for organizations by enhancing the firms' action learning and enlarging the experience pools for making future inferences, especially when the failure experience includes the case of performance recovery or turnarounds (Kim, Kim, & Miner, 2009; Kim & Miner, 2007; March et al., 1991). Due these characteristics of organizational failure experience, the research expects the decision makers' cognitive bias to be larger, and organizational search activity to be stronger and be easily initiated, in organizational circumstance of failure experience, resulting in higher level of risk-taking decisions and lower level of firm failure rate, compared to the organizational circumstance of success experience. Thus, the size of difference the top managers' change-focused and the status quo-focused cognitive frames bring on firms' risk-taking decisions and firm failure rate would be greater when the frames interact with failure experience of organizations, than their success experience. Thus, the research proposes the following hypotheses:

Hypothesis 5: *The difference which the shift in top managers' cognitive frames (from the status-quo focused cognitive frames to the change-focused cognitive frames) brings on firms' risk-taking decisions is greater in firms with failure experience than in firms with success experience.*

Hypothesis 6: *The difference which the shift in top managers' cognitive frames (from the status-quo focused cognitive frames to the change-focused cognitive frames) brings on firms' failure rate is greater in firms with failure experience than in firms with success experience.*

Next section of the paper introduces the setting, research sample, and research variables of the study that would be used in the empirical testing of the hypotheses proposed in the present section.

III. METHODS

3.1 Study Setting and Sample

The sample used in this research originates from the Federal Deposit Insurance Corporation (FDIC) of U.S. and covers commercial banks' 29 year history of accounting and financial data from January 1st, 1976 to December 31st, 2004. 36 banks were identified from the total population of U.S. commercial banks which initiated operation during the study setting's period and remained operational in the banking industry until 2008. Banks which went out of business and those with incomplete accounting or financial data were not included in the sample.

The banks' accounting and financial data were obtained from the database of FDIC and the Bank Regulatory of Chicago Federal Reserve Board. The banks' annual reports were retrieved from the financial report archives found on their web sites or the SNL Financial's Bank Regulatory Database.

To explore research questions about the influence of organizational learning from extreme performance experience and its interaction relationships with top managers' cognitive frames, banks' complete history

of accounting and financial data were considered as study's sample. Banks' accounting and financial data used for this study date back from the banks' foundation up until the fourth quarter of 2004. In addition, the sample of banks were selected within the age-range of the same cohort group, with each bank's operation initiation date included in the 29-year study setting period from 1976 to 2004. Limiting the choice of sample banks into a single cohort group was an outcome of following the suggestions of prior studies on banking industry (e.g., Kim, Kim, & Miner, 2009) that cohort sample of banks minimizes effects of other determinant factors, which has little relevance to study, on research outcomes such as firm performance.

In this research, banks' performance was measured using Texas ratio, in a quarterly basis. Texas ratio, which had been used in prior research studies to gauge banks' credit troubles, had been known for indicating the likelihood of banks' failure (Federal Reserve Bank of Dallas, 2012). The ratio compares the size of banks' low quality assets to the size of their available capital and is calculated by dividing the banks' book value of nonperforming assets and real estate owned by the amount of their equity capital and loan loss reserves (Federal Reserve Bank of Dallas, 2012). One of the banks' low quality assets, the nonperforming loans, refers to loans with payments to interest and principal due date by 90 days or more.

Another kind of banks' low quality assets, the real estate owned, refers to a type of property remained in banks' assets as it wasn't sold in banks' foreclosure auction (International Monetary Fund, 2005). Texas ratio earned its name in late 1980s when a researcher called Cassidy found in his study that banks, particularly those in the recession period of 1980s in Texas, U.S., had high likelihood of bankruptcy when the ratio reached value over 100% (Federal Reserve Bank of Dallas, 2012).

This research chose banking industry of U.S. as the research context, following the suggestions of prior research that the industry provides useful and meaningful research context for studying organizational learning (e.g., Kim, Kim, & Miner, 2009) Furthermore, the previous subprime mortgage crisis erupted in 2008 in the industry showed some merits of the industry as a research context by demonstrating how large the influence of the firms' decisions, and inevitably their learning from prior experience had been to firm performance and the national economy during the period of economic turbulence (Kim, Kim, & Miner, 2009). Based on these reasons, the context of the study was chosen as commercial banking industry of the U.S. within the time period of before and during the subprime financial crisis, for exploring the study's research question.

3.2 Dependent Variables

Risk-taking Decisions. The risk-taking decisions of banks, one of dependent variables of the study, were measured by calculating the banks' ratio of certificate of deposits to total liabilities, as in the research of Sinkey and Greenwalt (1991). The ratio, so-called CD rate in research papers, is one of widely used proxies used for measuring the degree of banks' coincident risk-taking decisions (Sinkey & Greenwalt, 1991). Banks' certificate of deposits, called as brokered deposits in another term, are one component of banks' volatile funds and reflects banks' level of short-run investments (Minsky, 1969).

Failure Rate. In this research, banks were considered to have failed if their Texas Ratio reached above the average level of the Texas Ratio of the sample banks in 2008 (7.28), for more than two quarters during the observation period of the research's dependent variable (2008 Q1-Q4). In calculating the average value of the sample banks' Texas Ratio, ratio of values in the upper and lower 5% of the sample banks' total value range were omitted, considering they are outliers. Hazard rate of sample banks' failure were analyzed using the Weibull model in the event history analysis, under the assumption that episodes of banks' performance history closely align to the Weibull distribution (Blossfeld, Golsch, & Rohwer, 2012;

Carroll & Hannan, 2000), after the Kaplan-Meyer estimation. In addition, the Weibull model was found to be most fit when the models' analysis outcome was compared to that of other models.

3.3 Independent Variables

Success Experience. Success and failure experience was measured in this research by using the value of banks' Texas ratio calculated with the banks' accounting and financial data. A bank was considered to be successful when it obtained a Texas ratio below 1.0 in a given quarter, which corresponds to a situation when banks' amount of available capital exceeded that of low quality assets. Success experience of a bank was calculated, following Kim, Kim, and Miner (2009)'s operation, by accumulatively summing up the values of the bank's success experience from its operation initiation date to 2004 Q4. As the value earned from learning has a tendency to depreciate over time (Argote, 2012), each value of experience in a given quarter was discounted by the experience's age, or the number of quarters each experience went through the performance history until 2008 Q4, as in previous studies on organizational learning (e.g., Ingram & Baum, 1997).

Failure Experience. A bank's performance was classified as failure in the study when its Texas ratio reached, in a given quarter, a value above 4.5 which is the average value of total sample banks' Texas ratio during their operation in the study setting period. A bank's failure experience was measured by accumulatively summing up the given bank's failure experience from its operation initiation date to 2004 Q4, with each experience value discounted by its age.

Top Managers' Cognitive Frames. Top managers' cognitive frames were measured through the content analysis of the letter to shareholder section of banks' annual report published for reviewing their performance in 2006. Based on the Whorf-Sapir hypothesis which states that the cognitive categories through which individuals attend to their world are reflected in the words they use (Sapir, 1944; Whorf, 1956), and following the research operation of prior studies gauging attentional orientation of firms' upper echelons by analyzing the content of their words (e.g., Cho & Hambrick, 2006; D'Aveni & MacMillan, 1990), the research measured the degree to which each shareholder letter contained words that are associated with either the attentional focus for change or the status quo. The criteria of words for measuring top managers' attentional focus, or their cognitive frames, were selected from the LIWC (Linguistic Inquiry and Word Count)'s 2007

dictionary, which classifies words into several categories (i.e., emotionality, social relationships, thinking styles, and individual differences) and gave score on each of the categories according to their usage frequency (Tausczik & Pennebaker, 2010). The first category of top managers' cognitive frames chosen in this research for measuring top decision makers' attentional focus was the time orientation, which is classified into sub-categories of the past, present and future orientation. Each sub-categories of time orientation was measured by counting the frequency of word usage of past tense (i.e., went, ran, had), present tense (i.e., is, does, hear) and future tense verbs (i.e., will, going to). Prior research have found word users' frequent use of past and present tense verbs to correlate with the users' psychological feature of living in the here and now, while the frequent use of future tense verbs correlates to word users' future and goal oriented characteristics (Tausczik & Pennebaker, 2010). The second category of cognitive frames was decision makers' activeness in action propensity in their given circumstances. It was measured by counting the frequency of the common verb usage (i.e., walk, went, see) and the auxiliary verb usage (i.e., am, will, have), following the previous research studying the type of verbs individuals use in their communication and its linkage to their psychological features. Frequent use of the auxiliary verbs, compared to the common verbs was found to reflect word users' passiveness in actions and correlate to their informal and

passive voice (Tausczik & Pennebaker, 2010). The third category of cognitive frames was top managers' degree of self-attachment to company, which is classified into subcategories of partial and deep self- attachment. Each of the subcategories was measured by counting the frequency of pronouns of different kinds that appear in the letter to shareholder sections of banks' annual reports. In the previous research, frequent use of first-person pronouns (i.e., I, me, mine, we, us, our) was found to correlate with the word users' psychological tendency to publicly share their personal information and also the high level of social connectedness between members of the same organization (Tausczik & Pennebaker, 2010). Hence, the frequency of first-person pronoun usage was assumed in this research to represent the word-users' high level of self-attachment and involvement to their company. On the other hand, the use of third-person pronouns (i.e., you, your, she, her, him, they, their, they'd) was found in previous studies to indicate word-users' interest headed toward domains that are outside the boundary of their organization. Therefore, the study assumed frequent appearance of third-person pronouns in banks' letter to shareholders to correlate with top managers' low level of self-attachment to their company (Tausczik & Pennebaker, 2010). Each cognitive frame's influence on firm decisions and performance was measured by calculating its ratio, dividing the frequency of word usage included in one cognitive frame sub-category

(i.e., future time orientation) by the sum of word usage frequencies of two subcategories classified as included under same higher-level cognitive frame category (i.e., future time orientation plus past and present time orientation), as the way Cho and Hambrick (2006)'s research used in measuring attentional orientation of firms' top managers (i.e., entrepreneurial orientation). To add on, in the research model, one-year gap (2005 Q1-Q4) was included. It was placed between the observation period of banks' experience and the observation period of top managers' cognitive frames to control the endogeneity that may exist among the variables. Another one-year gap (2007 Q1-Q4) was included in the research to control the endogeneity that may exist among the independent variables (organizational experience and top managers' attention) and the dependent variables (firms' risk-taking decisions and failure rate).

3.4 Control Variables

Several control variables were included in the research to control the effect of additional factors that may affect the research outcomes.

Organizational Characteristics. The research controlled the *bank size*, measured by the total assets of a bank, since firm size may affect firms'

decisions and their survival chances (Baum, 1996). Controlling bank size, or the banks' asset amount, has an additional effect of controlling the amount of *slack* firms have, which may affect the level of firms' risk-taking decisions (March & Shapira, 1992). The *capital asset ratio*, measured by the ratio of equity capital to total assets, was included in this research as one of control variables to control for banks' capital risk (Kim, Kim, & Miner, 2009). Furthermore, because banks' current asset conditions may give direct impacts on firm decisions and survival (Kim, Kim, & Miner, 2009), the logarithm value of banks' *2004 Q4 Texas ratio* was included as a control variable.

Industry and Environmental Conditions. As external environments can influence firms' decisions and performance (Kim, Kim, & Miner, 2009), *unemployment rate* of the state the bank is located in was included in the set of control variables. To control for possibility of bank failure attributed to the turbulence in the real estate market, *National Council of Real Estate Investment Fiduciaries (NCREIF) Property Index*, the total rate of return of investment in commercial real estate properties acquired in the private market for investment purposes, of a given quarter in the state a bank is located, in was included in the research as a control variable (Freund et al., 1997).

IV. RESULTS

Table 1 shows descriptive statistics and a bivariate correlation matrix for all research variables. Because many of the research variables were found in the correlation matrix to be highly correlated with other variables, each of the research variable's variance inflation factor (VIF) was measured to check its appropriateness for later statistical analysis. In measuring the VIF values, attention variables were grouped into status quo-related and change-related ones, since attention structures included in the same cognitive frames are closely inter-related in their concepts, thus showing high values of collinearity among them. When the status quo-focused attention was included as the representation of top managers' attention and the interaction terms of top managers' attention and organizational experience were excluded in the measurement, the average value of the VIFs resulted in 10.75. When top managers' attention was represented by change-focused cognitive frames in a similar way, the result slightly increased to 11.13. In both measurements, the average VIF value of the research variables was slightly over 10, which is the threshold value for judging the presence of collinearity among research variables. Though the average VIF values were above 10 in both measurements, the variables

which actually scored over 10 (ranging from 18.49 to 30.46) in each measurement were found to be same in both two measurement cases, which are success experience, failure experience, and their squared terms. Since the success and failure experience of organizations were found in Kim, Kim, and Miner (2009)'s research to significantly interact with each other in their relations to firm performance, these variables' VIF value scoring over 10 was attributed to the inherent characteristics of the variables and was assumed in this research to be theoretically reasonable, bearing no serious problem for further statistical analysis (i.e. regression analysis). The VIF value was calculated again with the previously omitted interaction terms of the research variables included in measurement, and the average value of the total variables scored below 10 in both cases, the value of 2.00 when the status quo-focused attention represented top managers' cognitive frames and 3.09 when change-focused attention represented the cognitive frames. To conclude, since none of the research variables showed significantly high level of collinearity in VIF measurements, it was assumed in this research that variables of the study raise no serious concerns for multicollinearity for implementing further analysis. Table 2, 3, 4, and 5 shows results of the regression analysis, event history analysis, and t-tests of the study.

TABLE 1 Descriptive Statistics and Bivariate Correlations

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Bank Size	6.07	0.90																				
2. Capital Asset Ratio	0.12	0.08	-0.15																			
3. Texas Ratio	0.35	1.06	-0.23	-0.45																		
4.Unemployment Rate	5.21	0.72	0.11	-0.25	0.26																	
5. NCREIF Index	3.13	0.32	-0.02	0.25	-0.30	0.43																
6. Success Experience	0.37	0.60	0.37	0.40	-0.82	-0.27	0.19															
7. Success Exp.^{2}	0.48	1.07	0.34	0.37	-0.79	-0.26	0.18	0.97														
8. Failure Experience	0.91	0.80	-0.05	-0.32	0.61	0.20	-0.11	-0.58	-0.50													
9. Failure Exp.^{2}	1.45	1.69	-0.03	-0.25	0.47	0.16	-0.16	-0.46	-0.39	0.95												
10. Past & Present Orient.	-0.20	1.14	0.09	-0.25	0.05	-0.10	-0.44	0.16	0.10	-0.04	0.04											
11. Past&Present Orient.^{2}	1.30	1.76	0.01	0.35	-0.05	0.30	0.53	0.09	0.13	-0.08	-0.11	-0.62										
12. Passiveness	-0.10	1.09	0.20	0.05	0.00	-0.04	-0.26	0.01	-0.01	-0.06	-0.05	0.06	-0.05									
13. Passiveness^2	1.17	2.46	-0.05	-0.09	0.13	0.05	-0.12	-0.14	-0.12	-0.02	-0.09	0.02	-0.07	0.68								
14. Partial Firm Attach.	0.13	0.11	0.13	-0.01	0.04	0.00	-0.23	-0.05	-0.06	-0.10	-0.11	0.03	-0.04	0.94	0.77							
15. Partial Firm Attach.^{2}	0.03	0.06	0.08	-0.05	0.08	0.05	-0.16	-0.10	-0.08	-0.06	-0.10	0.07	-0.06	0.83	0.89	0.93						
16. Future Orientation	0.20	1.14	-0.09	0.25	0.05	0.10	0.44	-0.16	-0.10	0.04	-0.04	-1.00	0.62	-0.06	-0.02	-0.03	-0.07					
17. Future Orient.^{2}	1.30	1.76	0.01	0.35	-0.05	0.30	0.53	0.09	0.13	-0.08	-0.11	-0.62	1.00	-0.05	-0.07	-0.04	-0.06	0.62				
18. Activeness	0.10	1.09	-0.20	-0.05	0.00	0.04	0.26	-0.01	0.01	0.06	0.05	-0.06	0.05	-1.00	-0.68	-0.94	-0.83	0.06	0.05			
19. Activeness^2	1.17	2.46	-0.05	-0.09	0.13	0.05	-0.12	-0.14	-0.12	-0.02	-0.09	0.02	-0.07	0.68	1.00	0.77	0.89	-0.02	-0.07	-0.68		
20. Deep Firm Attach.	0.87	0.11	-0.13	0.01	-0.04	0.00	0.23	0.05	0.06	0.10	0.11	-0.03	0.04	-0.94	-0.77	-1.00	-0.93	0.03	0.04	0.94	-0.77	
21. Deep Firm Attach.^{2}	0.74	0.21	-0.15	0.00	-0.03	0.03	0.25	0.03	0.05	0.11	0.11	-0.02	0.03	-0.96	-0.69	-0.99	-0.87	0.02	0.03	0.96	-0.69	0.99

TABLE 1 (Continued)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
22. Success × Past & Present	-0.06	-0.23	0.10	-0.08	-0.24	0.02	-0.09	-0.08	-0.05	0.56	-0.18	0.17	-0.05	0.16	0.05	-0.56	-0.18	-0.17	-0.05	-0.16
23. Success^2 × Past&Present^2	0.16	0.47	-0.65	-0.18	0.26	0.71	0.80	-0.33	-0.25	-0.10	0.28	-0.12	-0.04	-0.17	-0.09	0.10	0.28	0.12	-0.04	0.17
24. Success × Passiveness	0.22	-0.41	0.25	0.03	-0.38	-0.15	-0.25	0.04	0.04	0.29	-0.22	0.41	0.07	0.35	0.17	-0.29	-0.22	-0.41	0.07	-0.35
25. Success^2 × Passiveness^2	0.20	0.40	-0.63	-0.07	0.22	0.68	0.76	-0.34	-0.25	-0.12	0.24	-0.05	-0.01	-0.11	-0.06	0.12	0.24	0.05	-0.01	0.11
26. Success × Partial Attach.	0.00	-0.17	0.42	0.11	-0.19	-0.41	-0.35	0.64	0.57	-0.11	-0.03	0.60	0.53	0.58	0.53	0.11	-0.03	-0.60	0.53	-0.58
27. Success^2 × Partial Attach.^{2}	0.40	-0.04	-0.51	-0.18	-0.08	0.73	0.68	-0.41	-0.32	0.31	-0.09	0.19	-0.11	0.13	0.01	-0.31	-0.09	-0.19	-0.11	-0.13
28. Failure × Past & Present	-0.02	-0.17	-0.09	-0.18	-0.41	0.07	0.07	-0.02	0.07	0.74	-0.67	-0.08	0.00	-0.09	0.00	-0.74	-0.67	0.08	0.00	0.09
29. Failure^2 × Past&Present ^{2}	0.06	0.15	0.24	0.39	0.36	-0.22	-0.19	0.37	0.32	-0.49	0.75	0.01	-0.10	0.01	-0.04	0.49	0.75	-0.01	-0.10	-0.01
30. Failure × Passiveness	0.07	0.09	-0.06	-0.08	-0.15	0.06	0.05	-0.12	-0.14	-0.09	0.01	0.82	0.64	0.78	0.66	0.09	0.01	-0.82	0.64	-0.78
31. Failure^2 × Passiveness^2	-0.01	-0.17	0.20	0.05	-0.11	-0.17	-0.15	0.25	0.20	-0.02	-0.12	0.49	0.72	0.43	0.46	0.02	-0.12	-0.49	0.72	-0.43
32. Failure × Partial Attach.	-0.02	-0.19	0.43	0.03	-0.30	-0.48	-0.43	0.47	0.39	-0.12	-0.14	0.46	0.43	0.50	0.42	0.12	-0.14	-0.46	0.43	-0.50
33. Failure.^{2}× Partial Attach.^{2}	0.03	-0.16	0.30	-0.01	-0.30	-0.34	-0.30	0.31	0.25	-0.09	-0.19	0.50	0.47	0.50	0.42	0.09	-0.19	-0.50	0.47	-0.50
34. Success × Future Orient.	0.06	0.23	-0.10	0.08	0.24	-0.02	0.09	0.08	0.05	-0.56	0.18	-0.17	0.05	-0.16	-0.05	0.56	0.18	0.17	0.05	0.16
35. Success^2 × Future Orient.^{2}	0.16	0.47	-0.65	-0.18	0.26	0.71	0.80	-0.33	-0.25	-0.10	0.28	-0.12	-0.04	-0.17	-0.09	0.10	0.28	0.12	-0.04	0.17
36. Success × Activeness	-0.22	0.41	-0.25	-0.03	0.38	0.15	0.25	-0.04	-0.04	-0.29	0.22	-0.41	-0.07	-0.35	-0.17	0.29	0.22	0.41	-0.07	0.35
37. Success^2 × Activeness^2	0.20	0.40	-0.63	-0.07	0.22	0.68	0.76	-0.34	-0.25	-0.12	0.24	-0.05	-0.01	-0.11	-0.06	0.12	0.24	0.05	-0.01	0.11
38. Success × Deep Attach.	0.38	0.36	-0.85	-0.23	0.26	0.95	0.90	-0.54	-0.42	0.22	0.12	0.02	-0.14	-0.05	-0.09	-0.22	0.12	-0.02	-0.14	0.05
39. Success^2 × Deep Attach.^{2}	0.34	0.36	-0.86	-0.24	0.25	0.94	0.91	-0.50	-0.38	0.21	0.15	0.02	-0.12	-0.05	-0.08	-0.21	0.15	-0.02	-0.12	0.05
40. Failure × Future Orient.	0.02	0.17	0.09	0.18	0.41	-0.07	-0.07	0.02	-0.07	-0.74	0.67	0.08	0.00	0.09	0.00	0.74	0.67	-0.08	0.00	-0.09
41. Failure^2 × Future Orient.^{2}	0.06	0.15	0.24	0.39	0.36	-0.22	-0.19	0.37	0.32	-0.49	0.75	0.01	-0.10	0.01	-0.04	0.49	0.75	-0.01	-0.10	-0.01
42. Failure × Activeness	-0.07	-0.09	0.06	0.08	0.15	-0.06	-0.05	0.12	0.14	0.09	-0.01	-0.82	-0.64	-0.78	-0.66	-0.09	-0.01	0.82	-0.64	0.78
43. Failure ^{2} × Activeness^2	-0.01	-0.17	0.20	0.05	-0.11	-0.17	-0.15	0.25	0.20	-0.02	-0.12	0.49	0.72	0.43	0.46	0.02	-0.12	-0.49	0.72	-0.43
44. Failure × Deep Attach.	-0.02	-0.19	0.43	0.03	-0.30	-0.48	-0.43	0.47	0.39	-0.12	-0.14	0.46	0.43	0.50	0.42	0.12	-0.14	-0.46	0.43	-0.50
45. Failure ^{2} × Deep Attach.^{2}	0.03	-0.16	0.30	-0.01	-0.30	-0.34	-0.30	0.31	0.25	-0.09	-0.19	0.50	0.47	0.50	0.42	0.09	-0.19	-0.50	0.47	-0.50

TABLE 1 (Continued)

Variables	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
22. Success × Past & Present	-0.20																							
23. Success^2 × Past & Present^2	0.19	-0.48																						
24. Success × Passive	-0.41	0.67	-0.66																					
25. Success^2 × Passive^2	0.13	-0.54	0.91	-0.49																				
26. Success × Partial	-0.58	-0.06	-0.23	0.12	-0.22																			
27. Success ^{2} × Partial ^{2}	-0.18	0.45	0.15	0.50	0.24	-0.28																		
28. Failure × Past & Present	0.12	0.07	0.05	-0.02	0.05	-0.22	0.06																	
29. Failure^2 × Past & Present ^{2}	-0.03	-0.06	-0.12	0.02	-0.13	0.32	-0.16	-0.67																
30. Failure × Passive	-0.80	0.00	0.03	0.13	0.05	0.66	0.06	-0.24	0.04															
31. Failure^2 × Passive^2	-0.41	-0.03	-0.10	0.12	-0.08	0.60	-0.11	-0.03	-0.01	0.60														
32. Failure × Partial	-0.51	-0.05	-0.29	0.16	-0.26	0.83	-0.32	-0.21	0.21	0.58	0.47													
33. Failure ^{2} × Partial ^{2}	-0.52	-0.05	-0.20	0.16	-0.17	0.73	-0.22	-0.16	0.08	0.66	0.56	0.95												
34. Success × Future	0.20	-1.00	0.48	-0.67	0.54	0.06	-0.45	-0.07	0.06	0.00	0.03	0.05	0.05											
35. Success ^{2} × Future ^{2}	0.19	-0.48	1.00	-0.66	0.91	-0.23	0.15	0.05	-0.12	0.03	-0.10	-0.29	-0.20	0.48										
36. Success × Active	0.41	-0.67	0.66	-1.00	0.49	-0.12	-0.50	0.02	-0.02	-0.13	-0.12	-0.16	-0.16	0.67	0.66									
37. Success^2 × Active^2	0.13	-0.54	0.91	-0.49	1.00	-0.22	0.24	0.05	-0.13	0.05	-0.08	-0.26	-0.17	0.54	0.91	0.49								
38. Success × Deep	0.04	0.10	0.67	-0.16	0.62	-0.38	0.66	0.07	-0.20	0.05	-0.16	-0.50	-0.38	-0.10	0.67	0.16	0.62							
39. Success ^{2} × Deep ^{2}	0.04	0.08	0.74	-0.22	0.68	-0.35	0.61	0.07	-0.19	0.06	-0.15	-0.44	-0.32	-0.08	0.74	0.22	0.68	0.98						
40. Failure × Future	-0.12	-0.07	-0.05	0.02	-0.05	0.22	-0.06	-1.00	0.67	0.24	0.03	0.21	0.16	0.07	-0.05	-0.02	-0.05	-0.07	-0.07					
41. Failure ^{2} × Future ^{2}	-0.03	-0.06	-0.12	0.02	-0.13	0.32	-0.16	-0.67	1.00	0.04	-0.01	0.21	0.08	0.06	-0.12	-0.02	-0.13	-0.20	-0.19	0.67				
42. Failure × Active	0.80	0.00	-0.03	-0.13	-0.05	-0.66	-0.06	0.24	-0.04	-1.00	-0.60	-0.58	-0.66	0.00	-0.03	0.13	-0.05	-0.05	-0.06	-0.24	-0.04			
43. Failure ^{2} × Active^2	-0.41	-0.03	-0.10	0.12	-0.08	0.60	-0.11	-0.03	-0.01	0.60	1.00	0.47	0.56	0.03	-0.10	-0.12	-0.08	-0.16	-0.15	0.03	-0.01	-0.60		
44. Failure × Deep	-0.51	-0.05	-0.29	0.16	-0.26	0.83	-0.32	-0.21	0.21	0.58	0.47	1.00	0.95	0.05	-0.29	-0.16	-0.26	-0.50	-0.44	0.21	0.21	-0.58	0.47	
45. Failure ^{2} × Deep^2	-0.52	-0.05	-0.20	0.16	-0.17	0.73	-0.22	-0.16	0.08	0.66	0.56	0.95	1.00	0.05	-0.20	-0.16	-0.17	-0.38	-0.32	0.16	0.08	-0.66	0.56	0.95

TABLE 2 Results for Regression Analysis: Organizational Experience, Top Managers' Cognitive Frames, and Risk-taking Decisions

Variable	Model 1		Model 2		Model 3		Model 4		Model 5	
Constant	-0.500	(0.368)	-0.372	(0.511)	-1.245	(1.508)	0.060	(0.730)	2.353	(6.071)
Control Variables										
Bank Size	0.058+	(0.034)	0.127**	(0.037)	0.127**	(0.037)	0.002	(0.059)	-0.030	(0.063)
Capital Asset Ratio	-0.274	(0.412)	0.089	(0.427)	0.089	(0.427)	0.047	(0.759)	0.518	(1.239)
Texas Ratio	-0.117**	(0.035)	-0.226***	(0.052)	-0.226***	(0.052)	-0.285**	(0.069)	-0.223+	(0.113)
Unemployment Rate	-0.038	(0.050)	-0.050	(0.048)	-0.050	(0.048)	0.040	(0.052)	0.071	(0.069)
NCREIF Index	0.170	(0.112)	0.072	(0.143)	0.072	(0.143)	-0.137	(0.135)	-0.153	(0.150)
Independent Variables										
Success Exp.			-0.586*	(0.263)	-0.586*	(0.263)	0.354	(0.457)	0.107	(1.207)
Success Exp.^{2}			0.172	(0.127)	0.172	(0.127)	-0.463	(0.819)	-0.205	(0.439)
Failure Exp.			-0.039	(0.151)	-0.039	(0.151)	0.697	(0.581)	-0.165	(3.002)
Failure Exp.^{2}			0.010	(0.061)	0.010	(0.061)	-0.113	(0.088)	-0.680	(0.510)
Past & Present Orient.			0.001	(0.035)			0.108	(0.099)		
Past & Present Orient.^{2}			0.012	(0.021)			0.129+	(0.055)		
Passiveness			-0.030	(0.085)			-0.259	(0.272)		
Passiveness^2			0.030	(0.027)			-0.119	(0.133)		
Partial Firm Attach.			-0.499	(1.391)			0.671	(3.792)		
Partial Firm Attach.^{2}			-0.373	(2.100)			5.416	(7.318)		
Future Orient.					-0.001	(0.035)			-0.135	(0.131)
Future Orient.^{2}					0.012	(0.021)			0.113	(0.060)
Activeness					0.030	(0.085)			0.378	(0.297)
Activeness^2					0.030	(0.027)			-0.031	(0.130)
Deep Firm Attach.					1.245	(3.181)			-2.299	(12.057)
Deep Firm Attach.^{2}					-0.373	(2.100)			-0.060	(6.375)

TABLE 2 (Continued)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Interaction Variables					
Success Exp.× Past & Present Orient.				-0.290+ (0.123)	
Success Exp.²× Past & Present Orient.²				0.162 (0.128)	
Success Exp.× Passive				0.301 (0.620)	
Success Exp.²× Passive²				-0.420* (0.135)	
Success Exp.× Partial Firm Attach.				-3.370 (2.625)	
Success Exp.²× Partial Firm Attach.²				5.741 (21.654)	
Failure Exp.× Past & Present Orient.				-0.022 (0.060)	
Failure Exp.²× Past & Present Orient.²				-0.042 (0.023)	
Failure Exp.× Passive				0.269 (0.245)	
Failure Exp.²× Passive²				0.037 (0.036)	
Failure Exp.× Partial Firm Attach.				0.264 (0.176)	
Failure Exp.²× Partial Firm Attach.²				-0.166 (0.140)	
Success Exp.× Future Orient.					0.478+ (0.248)
Success Exp.²× Future Orient.²					0.119+ (0.061)
Success Exp.× Active					-0.666 (0.359)
Success Exp.²× Active²					-0.558* (0.193)
Success Exp.× Deep Firm Attach.					-0.272 (0.652)
Success Exp.²× Deep Firm Attach.²					0.451 (0.556)
Failure Exp.× Future Orient.					0.042 (0.074)
Failure Exp.²× Future Orient.²					-0.043 (0.024)
Failure Exp.× Active					-0.326 (0.284)
Failure Exp.²× Activeness²					-0.003 (0.041)
Failure Exp.× Deep Firm Attach.					0.679 (3.565)
Failure Exp.²× Deep Firm Attach.²					0.699 (0.612)

TABLE 2 (Continued)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Adjusted R-squared	0.465	0.621	0.621	0.800	0.784
F	6.90	4.71	4.71	5.97	5.56

Note. Standard errors in parentheses; +p<0.1, * p<0.05, ** p<0.01, *** P<0.001

TABLE 3 Results for Paired t-tests of Regression Coefficients

Variable 1	Variable 2	Coefficient for Variable 1	Coefficient for Variable 2	Mean Difference (Coef.2-Coef.1)	*t*-statistics	Degree of Freedom	Pr(T > *t*) /Pr(T < t)
	$Success\ Exp.^2 \times Past\ \&\ Present\ Orient.^2$	-0.463	0.162	0.625	0.000	35	0.000
$Success\ Exp.^2$	$Success\ Exp.^2 \times Passive^2$	-0.463	-0.420	0.043	0.000	35	0.000
	$Success\ Exp.^2 \times\ Partial\ Firm\ Attach.^2$	-0.463	5.744	6.207	0.000	35	0.000
	$Success\ Exp.^2 \times Future\ Orient.^2$	-0.205	0.119	0.324	0.000	35	0.000
$Success\ Exp.^2$	$Success\ Exp.^2 \times Active^2$	-0.205	-0.558	-0.353	0.000	35	0.000
	$Success\ Exp.^2 \times Deep\ Firm\ Attach.^2$	-0.205	0.451	0.656	0.000	35	0.000
	$Failure\ Exp.^2 \times Past\ \&\ Present\ Orient.^2$	-0.113	-0.042	0.071	0.000	35	0.000
$Failure\ Exp.^2$	$Failure\ Exp.^2 \times Passive^2$	-0.113	0.037	0.15	0.000	35	0.000
	$Failure\ Exp.^2 \times\ Partial\ Firm\ Attach.^2$	-0.113	-0.166	-0.033	0.000	35	0.000
	$Failure\ Exp.^2 \times Future\ Orient.^2$	-0.680	-0.043	0.637	0.000	35	0.000
$Failure\ Exp.^2$	$Failure\ Exp.^2 \times Activeness^2$	-0.680	-0.003	0.677	0.000	35	0.000
	$Failure\ Exp.^2 \times Deep\ Firm\ Attach.^2$	-0.680	0.699	1.379	0.000	35	0.000

TABLE 4 Results for Event History Analysis: Organizational Experience, Top Managers' Cognitive Frames, and Firm Failure Rate

Variable	Model 1		Model 2		Model 3		Model 4		Model 5	
Control Variables										
Bank Size	-0.416	(0.272)	-0.198	(0.422)	0.945	(0.512)	1.875	(0.633)	0.754	(0.507)
Capital asset ratio	-12.430	(10.243)	-22.134	(17.078)	-16.337	(19.046)	-124.523	(32.877)	-83.316	(23.845)
Texas ratio	1.807**	(0.861)	-0.021	(1.049)	0.383	(1.019)	-2.942	(1.573)	-1.141	(1.385)
Unemployment rate	-0.445+	(0.246)	-0.511	(0.376)	0.050	(0.413)	-1.745	(0.571)	-1.256	(0.401)
NCREIF index	0.512**	(0.206)	0.503	(0.267)	0.783+	(0.309)	0.916+	(0.323)	0.810+	(0.300)
Independent Variables										
Success Exp.			0.531	(11.916)	40.590	(22.318)				
Success Exp.^{2}			-10.462	(35.206)	-145.462	(107.930)				
Failure Exp.			1.961	(1.848)	4.244	(2.251)				
Failure Exp.^{2}			-0.226	(0.630)	-0.938	(0.729)				
Past & Present Orient.			-0.501	(0.525)						
Past & Present Orient.^{2}			0.113	(0.316)						
Passiveness			1.395	(1.405)						
Passiveness^2			0.134	(0.708)						
Partial Firm Attach.			-0.679	(16.381)						
Partial Firm Attach.^{2}			-42.622	(92.156)						
Future Orient.					0.589	(0.592)				
Future Orient.^{2}					-0.249	(0.335)				
Activeness					2.385	(1.169)				
Activeness^2					-0.342	(0.214)				
Deep Firm Attach.					-0.508	(14.777)				
Deep Firm Attach.^{2}					-20.486	(16.395)				

TABLE 4 (Continued)

Variable	Model 1	Model 2	Model 3	Model 4		Model 5	
Interaction Variables							
Success Exp.× Past & Present Orient.				-0.902	(5.243)		
Success Exp.^{2}*× Past & Present Orient.*^{2}				-24.229	(16.181)		
Success Exp.× Passive				-12.455	(12.286)		
Success Exp.^{2}*× Passive*^{2}				57.254	(48.764)		
Success Exp.× Partial Firm Attach.				-6.711	(7.886)		
Success Exp.^{2}*× Partial Firm Attach.*^{2}				-2113.413	(1710.347)		
Failure Exp.× Past & Present Orient.				0.013	(0.275)		
Failure Exp.^{2}*× Past & Present Orient.*^{2}				1.142	(0.287)		
Failure Exp.× Passive				0.043	(0.656)		
Failure Exp.^{2}*× Passive*^{2}				-0.042	(0.284)		
Failure Exp.× Partial Firm Attach.				3.773	(1.724)		
Failure Exp.^{2}*× Partial Firm Attach.*^{2}				-1.248	(1.389)		
Success Exp.× Future Orient.						4.768	(6.485)
Success Exp.^{2}*× Future Orient.*^{2}						-12.131	(35.390)
Success Exp.× Active						2.723	(12.125)
Success Exp.^{2}*× Active*^{2}						18.910	(31.432)
Success Exp.× Deep Firm Attach.						-3.708	(7.256)
Success Exp.^{2}*× Deep Firm Attach.*^{2}						-2.433	(10.804)
Failure Exp.× Future Orient.						0.016	(0.309)
Failure Exp.^{2}*× Future Orient.*^{2}						0.716	(0.211)
Failure Exp.× Active						-0.618	(0.591)
Failure Exp.^{2}*× Activeness*^{2}						-0.174	(0.188)
Failure Exp.× Deep Firm Attach.						-1.772	(1.767)
Failure Exp.^{2}*× Deep Firm Attach.*^{2}						1.015	(0.873)

TABLE 4 (Continued)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Log Likelihood	-44.287	-37.145	-29.005	-25.319	-31.945
Wald chi^2	27.87	24.07	31.28	28.33	31.83
Number of Observation	934	934	934	934	934

Note. Standard errors in parentheses; +p<0.1, * p<0.05, ** p<0.01, *** p<0.001

TABLE 5 Results for Paired t-tests of Event History Analysis Coefficients

Variable 1	Variable 2	Coefficient for Variable 1	Coefficient for Variable 2	Mean Difference (Coef.2-Coef.1)	*t*-statistics	Degree of Freedom	Pr(T > *t*) /Pr(T < t)
	$Success\ Exp.^2 \times Past\ \&\ Present\ Orient.^2$	-10.462	-24.229	-13.767	0.000	1896	0.000
$Success\ Exp.^2$	$Success\ Exp.^2 \times Passive^2$	-10.462	57.254	67.716	0.000	1896	0.000
	$Success\ Exp.^2 \times\ Partial\ Firm\ Attach.^2$	-10.462	-2113.413	-2102.951	0.000	1896	0.000
	$Success\ Exp.^2 \times Future\ Orient.^2$	-145.462	-12.131	133.331	0.000	1896	0.000
$Success\ Exp.^2$	$Success\ Exp.^2 \times Active^2$	-145.462	18.911	164.373	0.000	1896	0.000
	$Success\ Exp.^2 \times Deep\ Firm\ Attach.^2$	-145.462	-2.433	143.029	0.000	1896	0.000
	$Failure\ Exp.^2 \times Past\ \&\ Present\ Orient.^2$	0.226	1.142	0.916	0.000	1896	0.000
$Failure\ Exp.^2$	$Failure\ Exp.^2 \times Passive^2$	0.226	-0.042	-0.268	0.000	1896	0.000
	$Failure\ Exp.^2 \times\ Partial\ Firm\ Attach.^2$	0.226	-1.248	-1.474	0.000	1896	0.000
	$Failure\ Exp.^2 \times Future\ Orient.^2$	-0.938	0.716	1.654	0.000	1896	0.000
$Failure\ Exp.^2$	$Failure\ Exp.^2 \times Activeness^2$	-0.938	-0.174	0.764	0.000	1896	0.000
	$Failure\ Exp.^2 \times Deep\ Firm\ Attach.^2$	-0.938	1.015	1.953	0.000	1896	0.000

Organizational Experience, Top Managers' Cognitive Frames, and Firm Decisions

Hypothesis 1 predicted top managers' cognitive frames for change, represented by (a) future time orientation, (b) activeness in action propensity, and (3) deep self-attachment to company, to positively interact with organizational success experience in increasing the level of firms' risk-taking decisions, more strongly than the case when top managers' possess cognitive frames for the status quo. The results of regression analysis shown in Model 4 and 5 of Table 2 and the results of t-tests for mean difference between the regression coefficients shown in Table 3 failed to support the prediction. Unlike what was predicted in the hypothesis, firms with success experience made higher level of risk-taking decisions when their top managers possessed cognitive frames for the status quo (mean difference between regression coefficients of success experience-cognitive frames interactions terms and success experience scoring 2.991) than when top managers possessed cognitive frames for change (mean difference between regression coefficients of interaction terms and experience scoring 0.209).

The prediction made in Hypothesis 2 was that top managers' cognitive frames for change positively interact with organizational failure experience in increasing firms' risk-taking decisions more strongly than when top managers' possess cognitive frames for the status quo. The

prediction of hypothesis 2 was supported. The result in Model 4 and 5 of Table 2 and Table 3 showed stronger positive interaction relationships between organizational failure experience and top managers' changed focused cognitive frames (increase in regression coefficient scoring 0.898) than the case when status quo-focused cognitive frames were included in the interaction relationships (increase in regression coefficients scoring 0.063). To conclude, the contention made in hypothesis 2 that top managers' cognitive frames for change interact with organizational failure experience in increasing firms' risk-taking decisions more strongly than cognitive frames for the status quo was supported.

Organizational Experience, Top Managers' Cognitive Frames, and Firm Performance

Hypothesis 3 predicted top managers' cognitive frames for change to positively interact with organizational success experience in decreasing firms' failure rate more strongly than top managers' cognitive frames for the status quo. Results of Model 4 and 5 in Table 4 and results shown in Table 5 rejected the proposed hypothesis: the mean difference between event history analysis coefficients of success experience and its interaction terms with top managers' change-focused cognitive frames was 146.911, while the mean

difference between coefficients of success experience and cognitive frames for the status quo was -683. The result indicates that for firms with organization-level success experience, top managers' cognitive frames for the status quo, rather than change, drive decrease in firm failure rate.

In hypothesis 4, top managers' cognitive frames for change were predicted to positively interact with organizational failure experience in decreasing firms' failure rate. However, the research result rejected the contention made in the hypothesis and showed results opposite from the prediction: top managers' cognitive frames for the status quo, rather than change, functioned in decreasing firms' failure rate in their interaction relationships with firms' failure experience. The mean difference between coefficients of failure experience and its interaction terms with the status quo focused cognitive frames was -0.275, while the mean difference between coefficients of failure experience and its interaction terms with change-focused attention was 1.457. The result of the study indicates that for firms with organizational failure experience, top managers' cognitive frames for the status quo, rather than change, contributed in decreasing firms' failure rate.

The Difference the Change in Top Managers' Cognitive Frames Makes in Firm Decisions and Performance Depending on the Type of Organizational Experience

Hypothesis 5 predicted the size of influence or difference the change in top managers' cognitive frames give on firms' risk-taking decisions to be greater when the cognitive frame interacted with firms' organization-level failure experience than with success experience. To compare the size of influence which changes in top managers' cognitive frames give on firms' risk-taking decisions, mean difference value of regression coefficients of change-focused cognitive frames was subtracted by the mean difference value of regression coefficients of status-quo focused cognitive frames and was divided by the mean difference value of regression coefficients of status-quo focused cognitive frames, taking the numerical expression taking the form of '(B-A)/A'. The results showed greater impact of change in managerial cognitive frames on firms' risk-taking decisions when the cognitive frames interacted with firms' failure experience (the value of 7.952) than with success experience (value of -0.909). To conclude the result supported hypothesis 5 and supported the contention of the hypothesis that shift in top managers' cognitive frames from the status quo-focused ones to the change-focused ones brought larger impact on making change in the level of firms' risk-taking decisions.

In a similar vein, hypothesis 6 expected the size of influence, or change, given by change in top managers' cognitive frames on firms' failure rate to be greater when the frames interacted with firms' failure experience than with success experience. The result supported the contention, with the size of cognitive frames' influence on making difference in firms' failure rate in interaction relations with failure experience larger (the value of 6.298) than the size of influence made in interaction relations with success experience (the value of 1.215). The result indicates that the shift in top managers' attention focus from the status quo to change gives larger impact on firm performance when the cognitive frames interacted with firms' failure experience, compared to the case of interactions with firms' success experience.

V. DISCUSSION

Summary of Findings

The primary goal of this research has been examining joint effects of top managers' cognitive frames and organizational extreme performance experience in affecting firms' risk-taking decisions and performance. The first two research hypotheses contended change-focused cognitive frames of top managers to positively interact with organizational success and failure experience in increasing firms' risk-taking decisions, more strongly than top managers' cognitive frames for the status quo. Later two hypotheses extended the prior hypotheses by studying the variables' interaction relationships in giving influence on firm performance, particularly firms' failure rate. The hypotheses contended the change-focused cognitive frames of top managers to positively interact with organizational success and failure experience in decreasing firms' failure rate, more strongly than cognitive frames for the status quo. The final two hypotheses questioned the type of organizational experience in which top managers' cognitive frames exert their greatest influence on the research variables' interaction relationships, and contended organizations' failure experience, compared to the success experience, to interact with top managers' cognitive frames in a greater

degree.

Overall, the research results partially supported the hypotheses (hypothesis 2, 5, and 6). About the research findings supporting only the interaction relationships of hypothesis 2, which contends change-focused managerial cognitive frames to positively interact with organizational failure experience in increasing firms' risk-taking decisions, the research attributes the outcome to the characteristics of study's temporal and spatial contexts. Since commercial banks during the previous subprime mortgage crisis in U.S. may have confronted particularly high level of danger for bankruptcy and firm failure (Hanc, 1997), they must have shown strong conservativeness in making risk-taking decisions in managing assets, compared to firms in other industries, during the crisis period. Because of these industrial and environmental characteristics of commercial banks, those with prior success experience would have decreased their risk-taking decisions and maintained their prior asset management routines upon the outbreak of financial crisis, rather than confronting risks to change their asset's composition. Furthermore, about the research findings showing insufficient capability of top managers' cognitive frames in influencing the level of banks' failure rate, I again attribute the outcome to the characteristics of banking industry during the prior financial crisis. During

the credit crunch of the crisis period, change-focused attention would have been considered counter-effective to banks' top managers in avoiding bankruptcy, especially when managing banks' assets. Top managers' attention for change, which was represented by banks' decision for increasing the amount of brokered deposits, would have been considered by top managers to be detrimental, rather than promoting improvements, to bank's performance during the subprime mortgage crisis period.

Based on these research findings and explanations on outcomes partially supporting previous sections' contentions, I expect the research to offer following theoretical and empirical implications and contribute in scholarly and empirical ways in understanding the value of top managers' mindsets and organizational experience on firms' subsequent strategic moves and performance.

Theoretical Implications

I expect this research to contribute in extending streams of research related to the study in the following ways. First of all, the research is expected to provide theoretical contributions to understanding the value of top managers' attention in driving firms' decisions and performance. The

research found the attentional focus of top managers' cognitive frames, which are change and maintaining the status quo, to have capability for bringing significant difference in the level of firms' risk-taking decisions and future failure rate. The study's partially supported hypotheses added more weight on Ocasio (1997)'s proposition that the influence of firm decision makers and their attention structure goes beyond "passively receiving the environmental stimuli", and reach toward "actively creating the environment". By observing how two distinctive attention structure of top managers bring difference in firms' risk-taking decisions and failure rate, the research found potential of top managers' attention, the way the decision makers interpret and impose values on their perceived environments, in making difference in firms' decisions and performance, particularly in the context of environmental turbulence.

For the second, the research sheds light on the value of considering attention of firms' upper echelons in studying the influence of organizational experience. Research streams on organizational learning from experience and the attention-based view of the firm have been missing to drawing on each other's point of view in their studies. Particularly, the research stream on organizational experience may be viewed as yet been separated into macro- and micro-level of approach in their studies, majority of the studies

focusing on the linkage between macro-level variables such as organizations' experience and performance (e.g., Madsen & Desai, 2010). Thus, studies which consider organizations' and their members' behavioral characteristics, such as top managers' attention, in the research stream of organizational experience, are hard to find. The research is expected to make one meaningful step toward improving the two research streams building up contentions of the paper, theories on organizational learning from experience and the attention-based view of the firm, by relating the two research streams together. In addition, the research outcomes showing that joint effects of top managers' attention and organizational experience differs from the influence coming from either one of the two variables add more weight on the value of studying the research streams together. The expected implication of the research corresponds to and develops the proposition of Ocasio (1997) that organizational moves are outcomes of joint effects of various organizational factors, including firms' attention structures and decision-makers, which continuously interact with each other in response to environmental stimuli.

For the third, the research is expected to make contributions on deepening understandings on organizational learning, in a behavioral perspective, by showing how organizational activities in the learning

process (i.e., search) interact with attention of firms' top decision makers and make difference in firms' strategic moves and future performance. The research focused on the attitude of firm decision makers toward their organizational and environmental circumstances, specifically, their perception of time, activeness in action propensity, and their attachment of top managers themselves to their companies, and questioned on how these attention structures would interact with organization-level variables, particularly the performance experience of organizations, in firms' process of learning and decision making. The research made contributions on enriching the prior behavioral learning and decision making theories (e.g., Cyert & March, 1963; Greve, 2003), by showing how firms' decision makers evaluate, search, and decide with their attention structure which interprets and imposes value on organizations' circumstances. To sum up, the research sheds light on the value of considering top managers' mindset, or their attention, in studying firms' organizational learning and decision making.

Empirical Implications

The research is expected to provide the following empirical implications to firms' managers. One implication is that firms' top managers

need to recognize the influential power their attention has in making difference in their firms' strategic moves and performance. This research found firms' prior performance experience, or how well or poor their past performance had been, not as an unchangeable organizational history determining the highs and lows of their future performance, but as a 'manageable asset' which influence on firms may be shaped and altered by efforts made by top managers. Thus, it can't be more emphasized for firms' top managers, in this research, about the importance of having attention or point of view which may result in future developments of their firms.

Furthermore, in a similar vein, top managers and their firms need to pay efforts in providing better environments for the influence of top managers and their attention to be exerted in their full potential. Given that the top managers of firms and their attention retain substantial influential power, as well as responsibilities, of promoting improvements in their firms, individual as well as organizational level efforts are required in firms to search ways for the top decision makers and their attention to effectively implement their important roles. As Ocasio (1997) pointed out the interrelatedness of various organizational factors (i.e., rules, players, structural positions, and resources) in forming attention structure of firms, decision makers' search for their appropriate cognitive frames and

organizations' efforts for providing efficient and synergy-promoting environments for top managers' attention for the attention to exert its full potential would be crucial for firms anticipating their growth.

Limitations and Concluding Remarks

As in previous studies, this research cannot help but embrace a number of limitations. Firstly, the small number of samples used in the research is one limitation of the study. The number of banks included in the study was only 36, since finding sample of banks that satisfy every requirement of the study (i.e., cohort sample of banks, full history of accounting and financial data since the operation initiation date to the end of the study setting) was challenging with the resource of the study. The research expects increasing the size of the sample to help support contentions made in the study.

Secondly, another limitation to be pointed out is the validity of the research variables, particularly the Texas ratio, which was regarded in the study to represent firms' prior performance experience and to indicate the level of firms' asset composition. Since the use of this ratio is novel in current research fields, measuring firms' organizational experience using

different index, other than Texas ratio, would help strengthen the validity of using the variable.

For the third, another limitation of the research lies in the generalizability of the research outcomes, since most of the research variables, measured by using banks' accounting and financial data, represents only one facet of firms, specifically, their asset management capability. Whether the research implications previously discussed hold value with data representing firms' other types of abilities (e.g., capabilities for acquisition performance or capabilities required for human resources management) is yet to be researched by future studies.

Finaaly, the use of automated text analysis for gauging attention of top managers bears substantial limitations, and so does the dichotomous classification of the research of top managers' cognitive frames (i.e., the status quo- and the change-focused cognitive frames). Triangulating the outcome of content analysis with other research methods, such as surveying and interviewing firms' CEOs and top management team members about their attention and cognitive features, would be one way of strengthening the validity of the text analysis method. In addition, the research expects future studies to refine and enrich the concepts and categories of top managers' cognitive frames for better understanding managerial attention's

influence on firms.

To conclude, with these expectations on research implications and discussions on research limitations, this research considers that the study of the research, which focuses on the interaction relationships of top managers' attention and organizational experience and their influence on firms' decisions and performance, may contribute in providing some novel perspectives and worthy suggestions for future research extensions.

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국문초록

경영자의 인지적 틀과 조직경험이 기업의 위험감수 의사결정과 성과에 미치는 영향

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본 논문은 경영자의 인지적 틀, 즉 환경을 해석하고 행동을 추동하는 사고방식이 기업의 성과경험(성공 또는 실패)과 유의하게 상호작용하여 기업의 위험감수 의사결정과 실패율에 영향을 미친다고 주장한다. 이러한 주장의 논거는 의사결정과정에서의 조직의 행태적 특성과 조직의 성과경험에서 비롯된 경영진의 인지적 편향, 그리고 현상유지 또는 변화를 추구하는 경영진의 성향이 상호작용하여 이후 기업의 의사결정과 성과에 영향을 줄 수 있다는 것이다. 이를 검증하기 위해 본 논문은 1976년부터 2004년 사이에 개업한 미국 상업은행을 대상으로 내용분석, 회귀분석, 사건사분석을 시도하였다. 분석결과, 변화를 추구하는 경영진의 인지적 틀이 현상유지를 추구하는 인지적 틀보다 조직의 성공경험 및 실패경험과 상호작용하여 위험감수 의사결정을 증가시키고 기업의 실패율을 감소시키는 데 더 크게 기여한다는 가설이 부분적으로 지지되었다. 아울러 경영자의 인지적 틀이 기업의 의사결정과 성과에 미치는 영향이

성공경험보다 실패경험에서 더 큰 것으로 확인되었다. 이는 경영자의 인지가 조직경험이 기업의 전략행동 및 성과에 미치는 영향에 변화를 일으킬 수 있는 충분한 역량을 가지고 있음을 재확증한 것이다. 본 연구의 성과는 경영자의 인지와 관심이 외부 자극의 수용뿐만 아니라 환경을 능동적으로 창조하는 영향력을 발휘한다는 주의기반 기업이론의 입론을 진전시키고 논증하는 데 기여할 것으로 기대된다.

주요어: 경영자 인지; 조직경험; 주의기반 기업이론; 조직학습; 조직의사결정

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